

AN INTRODUCTION
TO CHILD STUDY



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A HAPPY BABY TAKING A SUN BATH

AN INTRODUCTION TO CHILD STUDY

By

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REVISED EDITION

NEW YORK
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PREFACE TO REVISED EDITION

Like the original volume, this book is designed to orient those who are planning to continue their study in the field of child development and guidance and to supply the minimum essentials to parents and teachers, and others who have or will have in the future responsibility for the education of children. For example, no student, whatever his vocational interests, should graduate from college without some preparation of this kind for his potential rôle of parent. It is essentially *an applied psychology of childhood*, for its emphasis is on the service aspect rather than on research methods. Relatively few persons who study child psychology will do original research, whereas all of them will deal with children or parents in some relationship or other. Accordingly, the attempt was made to incorporate the practical applications of the results of investigations rather than their implications for research.

The revision of the original *Introduction to Child Study* was made along two main lines: (1) to incorporate new material on the physical, social, and cultural as well as the psychological aspects of child development, published during the past eight years; and (2) to carry the knowledge about child development and methods of child study to the point of its actual utilization in the guidance of children. Detail was used for the purpose of (1) acquainting readers with the scientific basis of our knowledge of child development and guidance, (2) giving them concrete examples of methods of work with children, and (3) illustrating important generalizations. The attempt was made to keep the style and concepts simple so as not to present unnecessary technical difficulties to undergraduate students, teachers, and parents.

It is strongly recommended that laboratory work and observation in nursery schools, elementary and high schools,

and clinics be provided, if possible, or that, at least, the student studying the book have some first-hand contact with children of different ages. It would also increase his interest and comprehension in the field if he could set up a few simple experiments similar to some of those described. As many as possible of the supplementary books, pamphlets, and articles mentioned in footnotes and bibliographies at the end of each section should be made easily available to students.

The indebtedness of the author to leading research workers in the field of child psychology and to numerous publishers for permission to quote from published work is again evident throughout the book. The lines from *Wine from These Grapes* were reprinted by permission of both the publisher and the author. The suggested family schedule and the discussion in Chapter XII were prepared by Dr. Katherine B. Green, University of Michigan, whose detailed constructive suggestions regarding the entire manuscript were invaluable. Grateful acknowledgment is also made to Mrs. Helene S. Puls who read the manuscript from the point of view of a mother as well as of a student of psychology.

R. S.

NEW YORK CITY
April, 1938

PREFACE TO FIRST EDITION

Many parents, teachers, and other persons interested in children have asked the author to recommend to them a non-technical, accurate, and readable book easily applicable to the task of child study and guidance. Difficulty in finding such a book has led the author to attempt to write one, in the hope that it will meet the needs of those students and parents who are not specialists in psychology.

The many excellent books on child study and child psychology now widely current have failed in one or more respects to meet the needs of these individuals. In most of these books the material is organized around topics rather than around stages of development—a fact which makes application to a child of a given age difficult. Parents and teachers deal with children of a certain age, not with topics such as imagination, memory, and reasoning. They find difficulty in searching through chapter after chapter for suggestions that refer to children of the age in which they are interested. They can, however, easily apply to their child chapters bringing together the facts thus far found to be true of a child as a whole during each period of development. Physical, mental, social, and moral characteristics all enter into the ordinary activities of children and accordingly should not be sifted out and put into separate chapters, but should rather be built into unified pictures of children at the various stages of growth.

Some excellent books include technical and theoretical discussions which obscure rather than illuminate the material as a whole for individuals of limited psychological and biological backgrounds.

Other scientific and valuable books treat only one stage of development, thus making difficult a study of the relationships of this period of life to the periods that precede

and follow. To "look before and after" is necessary in order to understand a child at any cross section of his development. A panorama of childhood from birth through adolescence furnishes a long view which more intensive studies of one period of life fail to give.

Other books give too few specific details. They deal too largely in generalizations, which the average person finds difficult to apply to concrete situations.

Still other books emphasize problems, rather than "normal" development. They tend to make parents over-anxious about their children and to picture every child as a "problem child." They stress certain phases of child development to the exclusion of other equally important aspects, and thus present a one-sided picture of childhood.

This book aims to avoid some of the defects mentioned and to serve as a text for an orientation course in child study which will view the whole expanse of childhood, at the same time giving references to more intensive studies of each period.

It is hoped that this book will prove useful to individual parents, who will find immediately helpful the information relating to children of various ages; to parents' clubs, county demonstration groups, and other organizations of adults; to parent-teacher associations, to advanced high-school pupils in home-economics classes; to teachers in contact not only with children of school age but also with children of pre-school age through home visits, parent-teacher associations, and conferences with older children who serve as "little mothers"; to students in liberal arts colleges who need a knowledge of the fundamentals of child development in their rôles of future parent or teacher; and to students of psychology, who by surveying the reactions of the individual from birth to maturity may gain further insight into the principles of mental growth; as well as to students in teachers' colleges, normal schools, and nurses' training schools, for whom the book is primarily intended. For the more advanced students the book furnishes the minimum practical essentials and suggests further lines of investigation and

technical reading. Parents, teachers, and others who wish to study a given period or phase of child development more intensively or to make some scientific contributions of their own should refer directly to the books and articles cited in footnotes and listed at the end of each chapter. Teachers and parents, however, should not feel burdened with the responsibility of carrying out all the suggestions given by specialists nor of making psychological systematic observations of the children with whom they are associated. William James,¹ in his sane, sympathetic way of looking at life, said, "I fear that some of the enthusiasts for child study have thrown a certain burden on you in this way. By all means let child study go on—it is refreshing all our sense of the child's life . . . Our eyes and ears grow quickened to discern in the child before us processes similar to those we have read of as noted in the children—processes of which we might otherwise have remained inobservant. But, for heaven's sake, let the rank and file of teachers be passive readers if they so prefer and feel free not to contribute to the accumulation."

The indebtedness of the author to leading research workers in the field of child study is evident throughout the book.

The author is especially grateful to Dr. Arnold Gesell of the Yale Psycho-Clinic and to Dr. Dorothy Van Alstyne, Research Psychologist for the Institute for Juvenile Research, Chicago, Illinois, for their critical reading of the pre-school section; to Dr. Gertrude Hildreth, Associate in Research (Psychology) of the Lincoln School of Teachers College, for her criticism of the elementary school section; to Miss Jean Betzner, Associate in Elementary Education, and Miss Alice Dalglish, teacher in the Horace Mann kindergarten, for their help in compiling brief lists of some of the best recreational reading for children of different ages; to Miss Clara M. Taylor, Instructor in Nutrition at Teachers College, for her reading of suggested dietaries; to Professor Leta S. Hol-

¹ William James, *Talks to Teachers*, pp. 12, 13. New York: Henry Holt and Co., 1916. Quoted by permission of the publisher.

lingworth for her review of the adolescent period; to Professor Arthur I. Gates of Teachers College and Professor Georgina S. Gates of Barnard College, Columbia University, for reading the manuscript as a whole; and to Miss Jean Weld and Miss Phebe Bergen for assistance in editing the manuscript.

The writer is indebted to the large number of educational investigators whose writings are cited in this volume and especially to Dr. Arnold Gesell, Dr. Lewis M. Terman, and Dr. Thomas D. Wood, from whose publications quotations have frequently been made.

CONTENTS

	PAGE
PREFACE TO REVISED EDITION	v
PREFACE TO FIRST EDITION	vii
 CHAPTER	
I INTRODUCTION	1
PART I THE ROOTS OF BEHAVIOR	
II THE BABY AT BIRTH	11
III HEREDITARY INFLUENCES	24
IV PRENATAL INFLUENCES	34
PART II. THE EARLY PRESCHOOL PERIOD. THE FIRST TWO YEARS	
V. DEVELOPMENT DURING THE FIRST TWO YEARS	49
VI HOW THE BABY LEARNS	93
VII SPECIAL PROBLEMS OF THE FIRST TWO YEARS	120
VIII HOW TO STUDY THE BABY	139
PART III THE LATER PRESCHOOL PERIOD YEARS THREE, FOUR AND FIVE	
IX. DEVELOPMENT DURING THE LATER PRESCHOOL PERIOD	153
X HOW PRESCHOOL CHILDREN LEARN	199
XI. SPECIAL PROBLEMS OF THE LATER PRESCHOOL PERIOD	235
XII. SUGGESTIVE FAMILY SCHEDULE	252
XIII. STUDY AND GUIDANCE OF PRESCHOOL CHILDREN	264
PART IV THE PRIMARY PERIOD	
XIV. DEVELOPMENT DURING THE PRIMARY PERIOD	289
XV. HOW PRIMARY CHILDREN LEARN	333
XVI. SPECIAL PROBLEMS OF THE PRIMARY PERIOD	365
XVII. STUDYING PRIMARY CHILDREN	399

PART V. FROM THE PRIMARY PERIOD
TO THE ADOLESCENT YEARS

CHAPTER	PAGE
XVIII. DEVELOPMENT IN THE POSTPRIMARY-PREADOLESCENT PERIOD	437
XIX. LEARNING IN THE POSTPRIMARY-PREADOLESCENT PERIOD	483
XX. SPECIAL PROBLEMS OF THE POSTPRIMARY-PREADOLESCENT PERIOD	508
XXI. CHILD STUDY AND GUIDANCE IN THE ELEMENTARY SCHOOL	541

PART VI THE ADOLESCENT YEARS

XXII. DEVELOPMENT AND GUIDANCE OF ADOLESCENTS	583
APPENDIX	657
INDEX OF SUBJECTS	667
INDEX OF NAMES	675

TABLES

TABLE	PAGE
I. STAGES OF MOTOR DEVELOPMENT	57
II FAMILY SCHEDULES FOR FAMILIES OF VARIOUS SIZES . .	257-261
III GROUP INTELLIGENCE TESTS FOR PRIMARY GRADES . . .	410
IV. ACHIEVEMENT TESTS FOR PRIMARY GRADES	413-414
V. AVERAGE HEIGHT AND AVERAGE GAIN IN WEIGHT . . .	438
VI. INTELLIGENCE TESTS FOR GRADES FOUR TO NINE	546
VII ACHIEVEMENT TESTS FOR GRADES FOUR TO NINE . . .	550-553
VIII. HEIGHT-WEIGHT FIGURES FOR THE FIRST YEAR	657
IX HEIGHT-WEIGHT FIGURES FOR CHILDREN IN THE SECOND YEAR	658
X. HEIGHT-WEIGHT FIGURES FOR CHILDREN SIX TO EIGHT YEARS OF AGE	659
XI. HEIGHT-WEIGHT FIGURES FOR CHILDREN NINE TO TWELVE YEARS OF AGE	660

ILLUSTRATIONS

A HAPPY BABY TAKING A SUNBATH	<i>frontispiece</i>
	<small>FACING PAGE</small>
CECILE, EMILIE, ANNETTE, MARIE, AND YVONNE DIONNE . . .	159
A YOUNG GARDENER	202
CHILDREN MAILING LETTERS WHICH THEY HAVE WRITTEN . . .	342
A REAL AUDIENCE SITUATION	356
CHILDREN CHOOSING THEIR OWN LUNCHES	386
CHILDREN IN THE SCARBOROUGH SCHOOL MAKING MAPLE SYRUP .	489
HIGH-SCHOOL PUPILS WORKING ON A SCHOOL NEWSPAPER . . .	608

SUGGESTIONS TO STUDENTS FOR STUDY

1. Look through the table of contents to see what the book in general is about.
2. Before beginning to read a chapter take a few minutes to
 - (a) review what you already know about the subject,
 - (b) formulate questions you would like to have answered,
 - (c) decide upon your particular purpose in reading the chapter and the reading methods that would be most appropriate for that purpose
3. Read the questions and problems at the end of the chapter. Make as many of the observations and studies suggested as possible and keep the questions in mind as you read the chapter.
4. If your purpose is to get the author's thought in logical sequence, skim through the chapter first, noting especially the headings. Then read to get the main pattern of thought of each section and of the chapter as a whole.
5. Browse through the reference books available on each age level, supplementing the main content of the text with details and theories that seem valuable and interesting to you.

AN INTRODUCTION TO CHILD STUDY

CHAPTER I

INTRODUCTION

Time, that renews the tissues of this frame,
That built the child and hardened the soft bone,
Taught him to wail, to blink, to walk alone,
Stare, question, wonder, give the world a name,
Forget the watery darkness whence he came,
Attends no less the boy to manhood grown. . . .¹

Adults, in general, are friendly to childhood. They delight in the child's spontaneity; they are amused at his primitive adjustments to his new world; they marvel at his growth in wisdom and stature, and ability to get along with people. And yet, they are awkward at entering into his world and becoming an influence for good in his life. They lack a certain wizardry which de la Mare² has likened to the born gardener's "green thumb" — the gift of being able to examine, without causing damage, the most delicate plant and to bring it into flower.

Kinds of Knowledge Needed. — Although this intuitive gift cannot be acquired by reading about child psychology, it is reasonable to suppose that proficiency in aiding the best development of children grows out of knowledge, not out of ignorance. Basic to success in child study and guidance is the appreciation of the fact that the child grows, and that, as he grows, under certain environmental conditions, he passes through general sequences of development. Three kinds of information about children are especially useful to teachers and parents. The first is knowledge of

¹ Edna St Vincent Millay, *Wine from These Grapes*, p. 25 New York: Harper and Brothers, 1934

² Walter de la Mare, *Early One Morning in the Spring*, p. xvi. New York Macmillan Company, 1935.

methods of studying children; the second is knowledge of the kind of behavior which may be expected of children in each of the overlapping stages of development; the third is knowledge of how this behavior is acquired and modified.

Knowledge of methods of studying children is necessary in order to understand them better than the untrained person can. Adults are continually observing and passing judgment on children. Everyone who comes in contact with children studies them in a more or less incidental way. The old colored mammy, who when asked how she knew the water for the baby's bath was of the right temperature, said, "When de baby gets blue, ah know de water's too cold; when he gets red, ah know it's too hot," was studying the child in her own way. Her method, however, was not scientific, and, as is commonly the case with "snap" judgments, frequently resulted in serious errors.

Other examples of mistakes made as a result of inexperienced study of children can readily be found. One father said, "The boy is just plain lazy." Medical examination showed that the child was sick. Certain college authorities refused an applicant admittance to college on the grounds that he was "not college material." A study of the past history of this student showed him to be exceptionally well qualified for college work. Additional evidence of the inadequacy of superficial observation in giving a true estimate of a child is the failure of persons to distinguish intelligent children from stupid ones merely by looking at their pictures. These errors in judgment are due to oversight of important elements in the situation, inaccurate observation and recording, and errors of interpretation.

In order to help parents and teachers study children more skilfully this book will include suggestions as to how to make accurate, impersonal, systematic observations and to record them promptly; how cautiously and intelligently to use the more simple physical and mental tests and measurements in studying the continuous development or the special problems of children; and how to interpret the meaning of their observations. The only reliable source of informa-

tion about a particular child is that obtained by studying his background, developmental history, and behavior.

The second kind of information included in this book concerns typical sequences of behavior. For example, what can be expected of a baby at birth? What development in motor ability and in language ability usually takes place in the early years? What can a five-year-old do under particular environmental conditions; what will he remember; what kind of play is interesting and valuable for him? A knowledge of these central tendencies in behavior helps the parent and teacher to see wherein the behavior of a particular child differs from the reported behavior of other children in somewhat similar environments. Without such knowledge it would be impossible to identify the exceptional child.

We are even more concerned with the best development of every child than with their average development. Less attention, however, has been given to individual differences than to central tendencies in behavior at a given age. Yet it is just as important for a teacher or parent to know the range as the central tendency with respect to children's motor ability, memory, reasoning, and other characteristics.

An infant's repertory of reactions is relatively simple. As he grows older and environment increasingly exerts its influence on him, the number of possible responses he may make becomes greater. This increasing complexity of be-

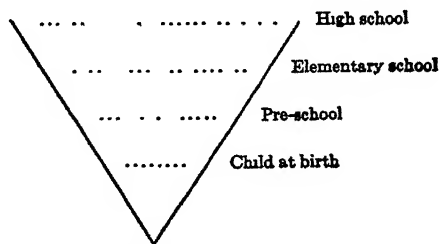


FIG. 1. INCREASING COMPLEXITY OF BEHAVIOR

havior may be represented diagrammatically by an inverted triangle, the apex representing the child at birth, and the

broadening sides representing later stages of development. At birth the kinds of reactions are relatively few. During the preschool period the responses of a child of a given age become increasingly varied and less predictable. At adolescence the behavior of the boy or girl is extremely complex and marked individuality has developed.

Knowledge of child study would be unnecessary if children, like Topsy, "just growed," in the way they should. Optimum development, however, does not take place except in a physical and social environment appropriate for that particular child at his present level of development. Children need guidance. Therefore, a third type of knowledge is needed — knowledge of how children acquire their ways of acting, thinking, and feeling. By knowing how habits are formed the parent and teacher will be better able to guide a child's development.

No further information would be needed if children built only good habits. But bad habits seem to be always with us. Even though more effective guidance of children will reduce the number of bad habits, it is probable that some children will always grow up with undesirable ways of behaving, under certain conditions, more or less firmly established.

Everyone associated with children has found himself in situations which have made him realize his need of more knowledge. A child of three or four years says "I won't" or "No" to every request. What should the parent do? A child of five screams and kicks when he is required to follow some phases of the essential daily routine. How should such a child be treated? A six-year-old does everything he is told to do, but nothing on his own initiative. How can the teacher help him to develop independence and self-reliance? A third-grade child equal in intelligence to other children in his class is the only one who has not learned to read. What should be done about it? A fifth-grade girl is timid and seclusive. What can the teacher do to further the best development of such a child? Innumerable situations of this kind continually arise in the process of educating children.

However, such remedial work is a minor task compared with the main purpose of providing a physical and social environment in which each child may realize his potentialities. To help children increase in wisdom, self-direction, and self-control day by day, without serious lapses, without retardation, is the goal of child study and guidance. To describe some of the known features of desirable development, to state some of the conditions that make it possible, and to suggest methods of correcting personality fault lines at each age of life are the chief tasks of the following chapters.

Periods of Development. — Although development is continuous, for convenience it may be marked off into six stages in the approach to maturity. These physiological stages do not correspond closely to our familiar chronological age units. In other words, chronological age is not homologous with biological age. This discrepancy between the stages of development recognized by our culture and the child's inherent developmental biological age must be recognized. It is expedient, however, to describe development in terms of the familiar periods of life at present recognized by parents and teachers. Each of these periods will be discussed in turn. the prenatal period and birth; the first two years of life, the preschool period ending with the fifth year; the primary period including years six to eight; the intermediate period comprising years nine, ten, and eleven; and the adolescent period, representing a wide spread of occurrence centering at about the twelfth or thirteenth to the end of the eighteenth year or later. In reality, however, each period merges imperceptibly into the next and can be explained only by what has gone before.

Importance of Each Stage of Life. — Each stage of life with its special opportunities and problems is important. Habits are being modified continuously as changes in the environment require new accommodations on the part of the individual. Entering the kindergarten or first grade, beginning high-school work, going away from home to college, all demand of the child especial new adjustments.

The period of infancy and young childhood has the advantage of being the period in which many habits are initiated "Well begun is half done." Habits are easier to form than to break. Habits, both good and bad, established in these first years tend to persist. Children seem not to outgrow their early experiences — especially vivid emotional crises — as they do their dresses and shoes. These experiences sometimes have been retained and have influenced adult behavior. The extreme view of the importance of the first years of life may be illustrated by a quotation from Alfred Adler,³ the Austrian psychiatrist. He is of the opinion that "a child has formed and shaped his behavior pattern at the end of his third year of life" Thereafter, Adler says, the child is not modified to any great extent by his environment, but makes his experience conform to his preconceived pattern. "He takes an experience and twists, turns, distorts, reshapes it until it fits into his pre-determined scheme of things." Although these statements probably give an exaggerated picture of the influence of the preschool period on all phases of the child's development, there is no doubt about the importance of this period from a physical standpoint, and little doubt about its importance emotionally. Gesell⁴ states that "one-third of all the deaths of the nation occur below six years" Accidents, contagious diseases, and malnutrition are more prevalent at this time than in the school periods. Any physical defect grows worse more rapidly during the first five years than during any other period. The preschool period is significant for the physical welfare and mental hygiene of the child, for education, for parents, for philanthropy, and for psychological research. Because these early years are important and because fundamental principles can be explained best in connection with the less complex activities of the young child, a larger amount of space is devoted to this period than to the suc-

³ Alfred Adler, "Character and Talent," *Harper's Magazine*, CLV (June, 1927), 64-72. Quoted by permission of the author.

⁴ Arnold Gesell, *The Mental Growth of the Pre-School Child*, p. 10. New York: The Macmillan Company, 1925.

ceeding stages of development. Moreover, a larger amount of accurate knowledge is available with reference to the preschool period than to any other.

The elementary school age is at present probably the most neglected phase of childhood in respect to scientific study. In order to increase our knowledge regarding all phases of the lives of elementary school children tests, observation, experimentation, and clinical study should be applied to these stages of development with the same skill and assiduity that have been used in the preschool period.

A child's behavior at adolescence is a natural and inevitable culmination of his previous development. Although there is truth in the idea of the infantile origin of conflicts and the persistence of attitudes acquired in early life, nevertheless the attitudes of adolescence are likewise important in determining later development.

No one phase of development is more important than any other. All are interrelated and interdependent. The aim of the following chapters is to present the facts about each period which have been discovered and found useful in child guidance.

PART I

THE ROOTS OF BEHAVIOR

CHAPTER II

THE BABY AT BIRTH

At birth the baby already has a history of growth and development. Birth merely represents a transfer of the growing individual from one type of environment to another; and from the baby's point of view, it is a most uncomfortable move. He has been rudely and often painfully transferred from a soft, uniformly warm environment to a relatively hard existence in a resting place of a different and uneven temperature. It is up to him to breathe for himself and to make the movements which will appease his hunger.

No wonder information about conditions of birth are usually included in case histories! It is often less hazardous to go to war than to be born. In addition to the physical birth injuries that sometimes occur, the birth experience may have psychological significance. There is some evidence that individuals who come comfortably into the world have a more placid disposition and a more even temperament, than those who are subjected to a prolonged and painful labor.

Scientific facts about the newborn have been accumulating during the last decade in numerous research centers for the study of normal newborn infants. Precise, controlled experiments have replaced the haphazard anecdotal **type of record** kept of an occasional child. We are on the ~~threshold~~ **threshold** of a third stage of research in which precise techniques will be applied consecutively to individuals and the **results of** such study will be treated individually, not in the mass.

Certain questions arise concerning a newborn baby: What is his physical appearance? How much should he weigh? What movements may he be expected to make? What does he see and feel and think? Does he have a

unique personality? Is his behavior consistent or entirely random?

PHYSICAL APPEARANCE

Anatole France thus describes the birth of *Little Pierre*.

Meanwhile I set up such a yelling that they all thought I was going to choke. I was as red as a tomato and unanimously pronounced an ugly little creature.¹

A newborn baby does not look "mighty like a rose" to anyone but a poet or his parents. To unprejudiced eyes he is a homely little creature, red and wrinkled. He has a relatively enormous head and abdomen, and relatively short legs. The baby's brain is approximately seven times as heavy as an adult's in proportion to the total weight of the body. An adult of the same proportions would be a fit subject for a freak show in a circus. The infant's eyes wander independently of each other and often cross.

PHYSICAL CHARACTERISTICS

The baby's pulse is rapid — 130 to 150 heart beats per minute as compared with sixty-eight to seventy-two beats of the average adult.² His respiration is also more rapid than an adult's, being, on the average, thirty-five to forty-five respirations a minute instead of sixteen to eighteen. The heart rate and respiration of normal infants, however, are characterized by extreme variability. Heart rate of infants during the first three months varied from 100 to 188 per minute.³ One healthy newborn infant during sleep may breathe sixteen times a minute while another may have a rate of ninety-three per minute.⁴

¹ Anatole France, *Little Pierre*, p. 12. New York: Dodd, Mead and Company, 1925. Quoted by permission of the publisher.

² J. P. C. Griffith and A. G. Mitchell, *Diseases of Infants and Children* (third edition), p. 38. Philadelphia: W. B. Saunders Company, 1933.

³ Unpublished data kindly supplied by Dr. Jean Deming, Child Research Council, University of Colorado School of Medicine, 4200 East Ninth Ave., Denver, Colorado.

⁴ Jean Deming and James P. Hanner, "Respiration in Infancy, II. A Study of Rate, Volume and Character of Respiration in Healthy Infants During the Neonatal Period," *American Journal of Diseases of Children*, XLI (April, 1936), 823-831.

At birth one baby may weigh three times as much as another. The average weight for girls is about seven pounds and for boys seven and a half pounds; the average length about nineteen inches. The majority of babies vary from the average within the normal limits of between six and nine pounds and between fifteen to twenty-four inches long. Without exceptionally well-planned food a loss of weight amounting to several ounces may be expected during the first few days while the baby is getting used to his new processes of digestion, his uncomfortable environment, and the major ordeal he has just been through. However, by the seventh to the tenth day at the latest, he is likely to have recovered his original birth weight.

Physicians sometimes divide babies at birth into two groups — “under-fours” and “over-fours.” Those weighing less than four pounds need special care. Their store of iron, for example, is usually deficient. This handicap of the “pale premature” may be overcome to some extent by feeding them, as early as possible, a half teaspoonful of spinach juice, sifted spinach, egg yolk, or other easily digested food rich in iron. During infancy prematurely born children are more frail than full-term children and require especially favorable environmental conditions.

PHYSICAL DEFECTS

Any marked deformity should be corrected as soon as possible. A club foot, for example, can be made normal if treated early enough, whereas if neglected the child will be lame for life.

Blindness from Babies' Sore Eyes (*Ophthalmia Neonatorum*) would practically never occur if a prophylactic were used in the eyes of every infant immediately after birth, and if every case of redness, swelling, and discharge from infants' eyes were promptly and adequately treated. A bulletin of the National Committee for the Prevention of Blindness⁵ describes specifically the simple treatment of

⁵ *Preventing Blindness from Babies' Sore Eyes* Publication 3 New York
National Society for the Prevention of Blindness (No date)

the eyes which should be given as a routine procedure immediately after birth

THE ACTIVITY OF THE NEWBORN

What may a mother expect her baby to do at birth? She should expect him to cry. The first cry is not a wrathful protest against his enforced entrance into this cold, uncomfortable world nor "an expression of an overwhelming sense of inferiority." It is rather an automatic response to internal and external stimuli — to the chemical composition of the blood, cutaneous stimulation, and atmospheric pressure. It is the most frequent sign that breathing has begun. No wonder the first cry has long attracted attention, for it is the first sign of the most human of man's attributes — speech. Incidentally, it is largely by crying that the infant controls his environment. By this means he summons adults from their world to minister to his needs.

Some babies, it has been reported, have sneezed themselves into the world. A few, bored from the beginning, start life with a yawn. Crying, sneezing, and yawning are responses which can be called forth at birth.

The vital processes of breathing, circulation, and digestion are likewise ready to function. Most of the duct glands are ready for action at birth although they may secrete only a limited amount and in response to certain specific stimuli. Hunger contractions were observed in infants that had not yet nursed. The pupil of the eye will grow larger or smaller in response to varying intensity of light. The baby usually knows how to make sucking movements, but sometimes it is difficult to induce him to take his first meals. Even at birth, when lying prone, a baby can turn his head far enough to permit free breathing. Babies do not smother themselves easily, as some old wives say. Suffocation may be due to glandular causes, but tales of accidental suffocation should not frighten mothers because they have little foundation in fact. If a baby is placed face down in a pillow, he will turn his head so that he can breathe easily.

The mechanism for walking, too, is present in unusual cases in the primitive form of primary creeping reactions. A baby, lying prone on a table, was observed to kick so vigorously against the hands placed against the soles of his feet that he propelled himself several inches across the table.

One of the newborn's most specific activities is the ability to grasp a rod placed in his hands. This reflex grasp is sometimes so strong that the infant can support his entire weight hanging from the rod for as long as two and a half minutes. Very few infants show no resistance to the withdrawal of the rod from their grasp. This reflex maintains its strength up to about three weeks. It tends to disappear around the fourth month as the hand movements become better co-ordinated.

In addition to these and other specific activities over which the newborn has mastery, there are movements that involve the whole body. From birth the baby may be observed to move in an aimless way—bringing the hands to the head, beating the bed coverings, making grimaces which sometimes seem like real smiles and sometimes are as grotesque as the expressions of gargoyles. He makes many kinds of jerky, kicking, random movements, which may be due to neurological immaturity, to the rapid growth of nerve centers, or to other internal stimuli.

Even when a specific stimulus, such as a light pinch on the knee is applied to a newborn infant, it is likely to evoke a wide variety of responses. It may produce a general squirming with greater activity near the place stimulated. General restlessness is the typical reaction; specific defense reactions, the rare response. An external stimulus may result in activity in almost any part of the body that is ready and able to respond. For example, a light pinch on the knee might result in sucking movements in a hungry infant. Diffuse or mass activity appears to alternate with specific responses and to precede localized patterns of behavior.

Although the infant's reaction to specific external stimuli at first tends to spread over the other parts of the body, even

within the first two weeks Pratt, Nelson, and Sun⁶ noted an increasing specificity in the reactions to stimuli. In so short a time the infant has learned to use his repertory of specific and general responses in adjusting to his new environment.

Although babies are born with the mechanics for action, they are not alike even in their earliest efforts to adjust to their new world. Individual differences have been observed in the simplest, most specific reactions of newborn infants. Still greater individual variation in response is evident in the more complex type of reaction. At birth some babies are almost three hundred times as active as others. These differences in muscular activity may be significantly related to personality. Very active children seem to be more social than underactive ones. This relationship between physical activity and personality is just beginning to be explored.

The degree of activity is more clearly related to certain bodily conditions. It increases just before feeding time and subsides when hunger is appeased. Activity is a rough index of discomfort. When the newborn is well adjusted to his environment, he sleeps; when he is hungry or in pain, his activity increases.

In relation to his size a newborn infant uses up a tremendous amount of energy. Pound for pound, his energy expenditure, on the average, is two and a half times as great as that of the mother. When he cries, his expenditure of energy is approximately three times as great as when he is sleeping.

THE GENESIS OF PERSONALITY

It is significant that individuality manifests itself during the first few weeks of life. Although certain behavior patterns are likely to be inconstant for an individual infant, activity differences, characteristic taste and temperature reactions, muscle tone, vigor and reserve of muscular energy, a drive or dynamic force, and degree of co-ordination appear

⁶ K. C. Pratt, A. K. Nelson, and K. H. Sun, *The Behavior of the Newborn Infant*. Columbus, Ohio: Ohio State University Press, 1930.

to be fairly constant. These characteristic tendencies seem to persist through the early weeks. So early is the genesis of personality!

In a word, both constancy and change characterize the personality of the baby. Traits are constant enough to make it plausible that a nucleus of personality exists at birth and that this nucleus persists and grows and determines to a certain degree the relative importance of the various traits. Some change is doubtless wrought by environmental factors, but this change is limited by the limitations of the original personality nucleus.⁷

This original "personality nucleus" involves such inherent constituents as sex, internal secretions, and nervous plasticity. Equally important from the standpoint of personality development are the tensions of hunger, fatigue, and bowel and bladder control which appear shortly after birth.

THE BABY'S SENSATIONS

It is difficult to discover what the newborn sees and hears and feels; still more difficult to know what he thinks. After the ordeal of birth he is probably in a condition similar to an adult who has undergone a serious operation. No one would expect normal reactions under such conditions. Another difficulty in studying the baby's sensations lies in his inability to indicate his sensations save by muscular activity.

In spite of the difficulties a great deal of careful experimentation with infants has lately been done to ascertain the newborn's sensations. The usual method is to present an external stimulus and to observe the resulting changes in the baby's action.

Sight. — One of the easiest sensations to study is vision, because the infant must move or fixate his eyes in order to see, thus giving the observer a clue as to whether he is aware of the light stimulus. Immediately after birth it is difficult to get any responses that show whether the baby can

⁷ Mary M. Shirley, *The First Two Years. Volume III. Personality Manifestations*, p. 56. Minneapolis, Minnesota: University of Minnesota Press, 1933.

see anything at all. Generally he is asleep; sometimes there is a film over his eyes for a short time; occasionally, as Tiedemann⁸ noted in 1787, infants turn their eyes to the light shortly after birth. At birth the baby has at best only a vague consciousness of light disturbed from time to time by blurs of darkness. He is startled by intense light and shuts his eyes against it. During the first two weeks of life infants almost invariably make some response to a light of an intensity of about four and one-half candle power. By the third or fourth week they are usually successful in following with their eyes a moving light or bright object. They respond to colored lights as well as white, but give little evidence that they distinguish color as such. In one experiment, however, infants seven to nine days of age appeared to respond slightly dissimilarly to different colors.⁹ Blue had the most marked effect in inhibiting activity, green, less effect; and red, the least effect. Girls were affected by these colors more than were boys under the conditions of the experiment. Seeing, as we understand it, does not occur at birth. The mother's face, a bright pink rattle, and other objects have no meaning to the newborn. He can see, but he does not know what he sees.

Hearing.—The newborn's reactions to sound are less clearly indicated than are his response to light. He may hear without giving any indication to the ordinary observer that he has heard. On the other hand, he may be responding to the vibration that accompanies a clang or a song rather than to the sound itself. Or, he may make no observable response to a sound because he is used to it, just as adults become accustomed to street noises and train whistles in their environment. After the first shock of the birth experience is over and after the middle ear is free from the

⁸ "Tiedemann's Observation on the Development of the Mental Faculties of Children," translated by Carl Murchison and Suzanne Langer, *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXIV (June, 1927), 205-230

⁹ J. M. Smith, *The Relative Brightness Values of Three Hues for Newborn Infants* University of Iowa Studies in Child Welfare, No. 12, 1936, 91-140. Iowa City, Iowa: University of Iowa, 1936

fluid which has filled the bag in which the baby has been enclosed previous to birth, the infant probably hears many sounds though he does not know their meaning. He may show that he has heard the sound by a change in movement or by a change in respiration. He may respond to certain sounds and not to others. All these conditions should be carefully controlled in testing the hearing of the newborn.

Marked individual differences in auditory sensitivity have been observed during the first few days of life. During this period some infants seem deaf to sounds which later readily evoke a reaction. Miss Shinn,¹⁰ who observed and wrote the biography of her baby niece, reported the first sign of hearing on the third day when the baby started violently at the sound of paper being torn. Under carefully controlled conditions the response appears to be related to the intensity and duration of the sound and the total bodily state of the individual as well as to age.

Taste. — When a drop or two of water or a weak solution of sugar, citric acid, quinine, or salt is placed on a newborn baby's tongue, he is likely to make some kind of facial grimaces, especially to salt. These grimaces are accompanied by circulatory and respiratory changes and activity of other parts of the body. Very young infants appear to differ from adults in their reactions to citric acid and quinine. They do not, like adults, find the bitter taste of quinine unpleasant. As the baby grows older, he gradually sucks longer on the sweet substances and a shorter time on the bitter and acid substances, even trying to push away the unpleasant substances or pull his head away from them. He does not appear to distinguish mild flavors. Cod-liver oil, castor oil, and olive oil seem to be equally acceptable. He takes turnip juice as eagerly as orange juice.

Thirst and Hunger. — Thirst is present at birth and demands satisfaction more frequently than many mothers realize. A thirsty baby will cry as lustily as a hungry one. While we do not know whether the baby feels as adults do

¹⁰ Millicent W. Shinn, *The Biography of a Baby*, p. 43. Boston: Houghton Mifflin Company, 1900.

when they are hungry and thirsty, it has been shown that the newborn baby's stomach contracts in hunger as the adult's does, only at more frequent intervals

Sleep.—Sleep is the newborn's major activity, usually occupying more than eighteen hours a day. The infant's sleep is probably somewhat different from the sleep of adults as it is scattered in short periods through the day instead of being concentrated in one long period.

Comfort and Discomfort.—The infant experiences general feelings of comfort and discomfort—comfort when he is warm and fed and unhampered in his movements; discomfort when he is cold and hungry and restricted in some of his movements. At birth he is sensitive to cold and warmth. A lowering of the room temperature makes him shiver and increases his muscular activity. When properly protected from the cold air of his new environment, he will frequently stop crying. When the newborn baby is comfortable, he is dozing or sleeping or nursing for all except a very small part of the day. As he grows, the time spent in comfortable awareness of the world about him will increase. His discomfort comes chiefly from factors inside his own body or immediately around him, such as hunger, colic, skin and muscle discomfort, cold, and possibly startle from swift, marked changes in his familiar world. Normal newborn infants appear to be sensitive to pain. Substances such as ammonia and concentrated acetic acid elicit vigorous though delayed responses. In fact, intense stimuli of any kind tend to evoke both general and specific movements.

Conditions Influencing Sensitivity.—A constant stimulus does not evoke a constant response. The response varies with several factors among which is the inherited constitution of the individual. An intelligent infant is sensitive to pain; an idiot makes no response to the same pain stimulus. Much of the insensitivity of the newborn to various sensations is related to the difficulty and duration of labor. The condition of the organism as a whole causes variation in an infant's immediate response to sounds and light. In one experiment infants who were crying showed the least re-

sponse to the stimuli introduced, while those who were awake and inactive showed the greatest response.

Although the newborn baby's repertory of reactions is not very useful in its random, unmeaningful state, he has the capacity for maturing and learning, for adjusting his movements to fulfill his needs; for finding more and more meaning in the world about him; for making connections between what happens to him and what he does; and later for modifying his actions by thought.

PHYSICAL CARE OF THE BABY

The first twenty-four hours of a baby's life are usually supervised by the doctor or nurse rather than the mother. The first bath, the first feeding, the first dressing are the work of an expert. The first garment placed on a newborn baby is the abdominal binder which holds the naval dressing in place. It is worn only during the first few weeks. A knitted fabric of cotton and wool is satisfactory for the binder because it expands and contracts with the abdomen, and accordingly is neither too tight just after a meal nor too loose when the baby's stomach is empty.¹¹

Before the mother begins to take care of the baby, the nurse should show her exactly how to diaper the baby skillfully and quickly, how to lift and carry him, how to bathe him with ease, how to dress him properly, and tuck him in warm and comfortable at night, how to give an enema, and how to avoid and treat attacks of colic. These details of caring for the baby are more easily learned from demonstrations by a visiting nurse or practice at a clinic than from verbal descriptions in books.

All the details of physical care in the first two weeks are important not only for the baby's present health and happiness but also for his future disposition and outlook on life. The professional baby nurse is more skilful than the in-

¹¹ Louise Zabriskie, "The Baby's Clothing," *Parents' Magazine*, V (December, 1930), 78-79, and Louise Zabriskie, "Preparing for the Baby's Birth," *Parents' Magazine*, VI (March, 1931), 70-71.

experienced mother in making the infant comfortable and happy.

The emotional state of the mother may likewise be reflected in the emotional state of the infant. A mother who is calm, happy, and relaxed is a more wholesome influence than an overanxious mother. Differences in the personality of first- and second-born children may be due in part to the greater confidence the mother has acquired by the time her second child is born.

QUESTIONS AND PROBLEMS FOR CLASS DISCUSSION OR STUDY GROUPS

A

1. What movements may a parent expect a baby to make at birth?
2. What does a baby see at birth? Can he hear?
3. What reactions are present at birth? How do these vary with the situation? How do these differ from those of the older child or adult?
4. Does a baby a week old know his mother?
5. How does the world which the baby sees and hears differ from the world of which the adult is aware?
6. What can the nurse or mother do to make the baby comfortable?
7. Does a newborn baby make different responses to various mild-tasting substances?
8. What instruction should the trained nurse give to the mother before she leaves her to take care of the baby?
9. What evidences of personality are present in the newborn baby?
10. What should a mother do when a baby cries?

B

INDIVIDUAL RECORD OF THE BABY AT BIRTH

Physical Measurements

Weight.....pounds	Pulse rate..beats per minute
Length.....inches	Respiration while sleeping.....per minute

Observation

Sit beside the baby and write rapidly all the movements he makes spontaneously.

Tests to Try

Put a small rod in the baby's hand. Note whether he grasps the rod, and the number of seconds he holds himself suspended by it.

Hold a bright light at one side of the baby. Note if the baby turns his eyes or his head toward the light.

Shake a rattle near the infant. Note any reaction made.

Place the infant face down on a pillow. Note his response.

Note other movements and sounds which the baby makes.

CHAPTER III

HEREDITARY INFLUENCES

Contrary to popular opinion, birth does not mark the actual beginning of a new individual. Approximately nine months before birth prenatal influence is exerted on the single cell from which each individual develops. Dorsey¹ estimates that 50,000 of these cells

could be mailed across the continent for a two-cent stamp; one hundred could ride on an inch-long spiderweb.

In this single cell are all the elements which heredity can give to the new individual. These inherited elements are brought together by the union of the germ cell from the male, the sperm, and the germ cell from the female, the ovum.

Biologists have amassed definite information about heredity. There are many books that present in detail our present knowledge of the mechanism of heredity and of the process by which life begins. Several of these are listed in the bibliography at the end of Chapter IV. Accordingly, only a few practical questions regarding heredity will be discussed here: What bodily structure and diseases are heritable? Will a child inherit his parents' bad habits? What is the relationship between heredity and environment?

HERITABLE STRUCTURE AND DISEASES

Resemblance between Parents and Their Children.—Some resemblance in physical traits between parent and child and between children of the same parents is usually obvious. Members of a family are usually more like one another than like their neighbors. This resemblance may

¹ George A. Dorsey, *Why We Behave Like Human Beings*, p. 2. New York: Harper and Brothers, 1925.

be due to the influence of the common environment of the family group as well as to the fact that the biochemical substances, called *genes*, inherited by every individual from his parents are present in each of the cells of his body and influence his development before and after birth

The chief reason why resemblance between parent and offspring is not greater is because the possible combination of traits inherited by a given child is incalculably complex. Certain potential characteristics often lie hidden in the germ cell of a parent who himself displays different inherited characteristics. Moreover, there is a tendency which Galton² noted many years ago for children to approach the average of their race in any trait. Exceptionally intelligent parents may expect some of their children to be more intelligent than the average child but less intelligent than themselves. Exceptionally dull parents are likely to have children less intelligent than the average child but more intelligent than themselves

Inheritance of Physical and Mental Traits.—Certain physical traits, such as color blindness, shortness of fingers, color of eyes, curly or straight hair, appear to be determined by heredity. Under ordinary conditions environment does not modify these characteristics. Under extraordinary conditions the course of growth may be deflected in astonishing ways. At a certain stage of embryonic development of a salamander a potential eye may be transplanted to another embryo of the same species and converted into a gill. Evidence is accumulating to show that nutritional condition may have a decided effect upon the heights of individuals and races.

There are hereditary tendencies toward longevity and certain mental traits, such as high intelligence. Feeble-mindedness tends to run in families. A few kinds of insanity and a good ear for music appear to be inherited.³ There

² Francis Galton, *Natural Inheritance*, pp. 116–119. New York: The Macmillan Company, 1894.

³ W. E. Castle, *Genetics and Eugenics*, Table 33, pp. 338–339. Cambridge: Harvard University Press, 1929

are also family traits of ease of learning, mental vigor, and poise. Certain family trees have been studied in detail. The descendants of the Edwards-Tuttle union and the Lee family of Virginia, on one hand, and the Jukes⁴ and the Kallikaks,⁵ on the other hand, seem to show the influence of good and poor heredity, respectively. However, the fact that the Edwards-Tuttle family and the Lee family have long lines of illustrious descendants while the Jukes and the Kaks of the Kallikaks show similarly long lines of criminals and paupers may be explained by the combined influence of heredity and environment rather than by either factor alone. Social heredity, as well as biological heredity, influences the personality development of a child. His memories, attitudes, and habits depend to a considerable extent on the way his parents, grandparents, brothers and sisters, other relatives, and friends have acted toward him and toward others.

Inheritance of Disease — Two diseases, namely, syphilis and gonorrhea, though not strictly speaking inherited, are frequently directly transmitted to the newborn, through the process of early infection. Tuberculosis, which for so long a time was thought to be an hereditary disease, is another example of infection, usually after birth. Children exposed to tuberculosis at home are more likely to develop the childhood type of tuberculosis than are unexposed children. Tuberculous boarders and lodgers in the home, brothers and sisters who have the disease, and especially parents who are tuberculous constitute a real menace to the health of children in that home. Accordingly, at the earliest possible moment, foci of contagion should be discovered and the child separated from them. The B C G vaccine is recommended as a measure for the prevention of tuberculosis in those who have not yet become infected and who may later be exposed to tuberculosis.

Persons, however, display different degrees of suscepti-

⁴ A. H. Estabrook, *The Jukes in 1915*. Washington, D. C.: The Carnegie Institution, 1916.

⁵ H. H. Goddard, *The Kallikak Family*. New York: The Macmillan Company, 1923.

bility to various diseases, due in part to environmental influences and in part to their respective constitutions and predispositions to disease ⁶ These hereditary tendencies may be transmitted by a person who has not himself developed the disease during his lifetime

A favorable environment will counteract tendencies toward certain disorders. For example, a person who by constitution is emotionally unstable may adjust happily in an environment that presents no greater strains than he can easily bear.

INHERITANCE OF ACQUIRED CHARACTERISTICS

There have been alleged instances of the inheritance of specific behavior patterns. The stick-insect which normally feeds on the privet leaf was for three generations taught to eat ivy with the result that the third generation ate ivy without training. There seemed to be with these insects as with certain animal families studied a residual effect of the habit taught for several generations carried over to the next generation so that the young adopt the habit more readily than did their parents ⁷

Biologists tend to agree, however, that, only under such exceptional conditions, are the qualities an individual has developed during his lifetime transmitted by inheritance to his offspring. Many mothers of the past generation who sewed beautifully have daughters who do no kind of needlework. If the parents have attained a high degree of scholarship, their child will not necessarily be a great scholar. If the father is a murderer, his child is not predestined to a criminal career. In the case of children of dissipated parents it is fortunate that the children do not directly inherit their parents' bad habits. In the case of parents who have achieved eminence it is unfortunate that their children do

⁶ Erwin Baur, Eugen Fischer, and Fritz Lenz, *Human Heredity*, translated by Eden and Cedar Paul, p. 379. New York: The Macmillan Company, 1931

⁷ E. W. MacBride, "The Inheritance of Acquired Habits," *Nature*, London, CXXXIII (June 9, 1934), 598-599.

not directly inherit the habits of healthful living, honesty, industry, and study which these parents have acquired during their lifetimes.

RELATIONSHIP BETWEEN HEREDITY AND ENVIRONMENT

Each individual is the product of inheritance and environment. Development results from the complex interaction of environment on hereditary constitution. It is impossible to separate heredity and environment except in theory.

There is a "developmental urge" originating in the germ cell that steers each specie along a broad predestined course from the fertilized ovum to old age. There are evidences of maturation at work in spite of lack of environmental stimuli. Locomotion in the *Amblystoma* did not seem to be hastened by exercise; swimming movements appeared at the appropriate time of development even when the embryos were completely deprived of external stimulation. Chicks given no practice in pecking by keeping them in the dark later showed little inferiority to chicks reared normally. Canaries learned to sing without being taught. There seems to be an inner urge toward the best growth possible for a given individual; a tendency to overcome handicaps and to compensate for deficiencies. There is a momentum of growth—"a progressive kind of determinism."⁸ Moreover, heredity is a stabilizing factor or safety device which prevents extremes of environmental influence.

Although species' characteristics persist, it must not be inferred that development is a mere unfolding of a preformed pattern. It is rather the construction of new patterns shaped by a particular environment. Heredity presents certain potentialities as well as limitations of the organism. The possibilities, however, can only be realized by being given opportunities for exercise. For example, the mechanism of walking and talking is early laid down in the

⁸ Arnold Gesell, "Maturation and the Patterning of Behavior," in *A Handbook of Child Psychology* (second edition revised), p. 233, Carl Murchison (Editor). Worcester, Mass.: Clark University Press, 1933.

individual's structure, but experience determines to some extent the time and specific pattern of these activities in a particular child.

Long ago Galton observed that certain twins were alike and tended to stay alike in many respects even though the environmental forces acting on each are apparently different. The extensive subsequent research on the problem has not progressed far beyond Galton's conclusion.

The interest in the relative contribution of nature and nurture has somewhat subsided, leaving in its train a considerable body of statistical evidence that hereditary differences in determining individual differences in intelligence are greater than environmental differences. This does not mean, however, that the general level of the environment is unimportant in determining the general level of functioning intelligence.⁹ Case histories supply the most striking evidence of this fact. Twin sisters, one of whom had gone through college while the other had had very little formal schooling showed a difference of twenty-four points in their intelligence quotients. This was an extreme case, but other pairs tended to show a degree of difference corresponding roughly to the amount of education they had enjoyed.¹⁰

Evidence is being accumulated from the study of identical twins that the environment may affect temperamental and social characteristics to a still greater extent.¹¹ One pair of identical twin sisters were brought up in widely different cultural environments. The one who had the advantage of a home of culture and abundant opportunities for social life was poised, affable, and self-confident, while the other who was reared in a home having meager cultural and social advantages was somewhat awkward, diffident, and restrained and felt herself to be inferior. Differences in environment appear to account for variation in personality traits other

⁹ F. K. Shuttleworth, "The Nature *versus* Nurture Problem, Part II," *The Journal of Educational Psychology*, XXVI (December, 1935), 655-681.

¹⁰ Frank N. Freeman, "Heredity and Environment in the Light of the Study of Twins," *The Scientific Monthly*, XLIV (January, 1937), 13-19.

¹¹ *Ibid.*, p. 16

than intelligence to a greater extent than do differences in heredity.

Dunlap has concisely and clearly expressed the interrelation between heredity and environment:

Nature and nurture are mutually inclusive. Hereditary tendencies are not absolute, but are relative to the environment, and are capable of formulation only in terms of the environment. Environmental influences, on the other hand, operate only on hereditary tendencies.¹²

The ratio of hereditary to environmental influences probably does not remain constant during childhood. Accordingly, the level of development reached should be taken into consideration in any discussion of the nature-nurture question. Heredity might be expected to play a larger part in the development of simple, elementary mental functions while environment appears to exert a greater influence on more complex verbal aspects of intelligence. In every respect, however, there is great diversity of growth pattern.

PRACTICAL APPLICATIONS

There are many practical applications of the scientific facts regarding inheritance. The choice of a mate who is healthy and intelligent and whose ancestors and relatives have attained some degree of eminence increases the chances of giving birth to superior children. Men do not "gather grapes of thorns, or figs of thistles." It is true, to be sure, that human beings are not "wholly grapes or wholly thistles." They represent a complex combination of potentialities. A child of genius may come from an obscure or even a disreputable family. But why take a chance when choice is possible? Love is not antagonistic to such qualities as health, quickness to profit by experience, sagacity in meeting new situations, and achievement up to the limit of one's educational opportunities.

Eugenists hope to improve the race by promoting a better selection of mates — by seeing that the right children are

¹² Knight Dunlap, "Psychological Hypotheses Concerning the Functions of the Brain," *The Scientific Monthly*, XXXI (August, 1930), 104.

born. In several communities this has been done. A province in northern Italy was burdened for many years with a certain type of feeble-minded individual. Finally in 1890, these afflicted individuals were prevented from marrying. The result was that by 1910, this type of person had almost disappeared from the province. Unless the hereditary factors are clearly recognized and controlled through matings, it seems probable that the human race will deteriorate.

Euthenists, on the other hand, hope to improve the race by modifying the child's environment. They would provide

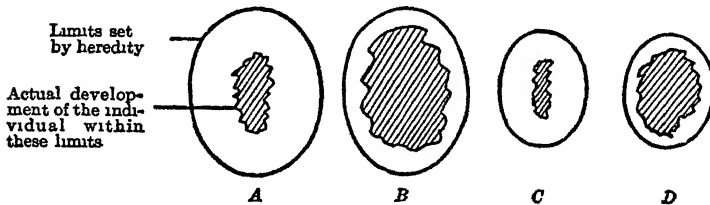


FIG. 2. SCHEMATIC REPRESENTATION OF THE RELATION OF HEREDITY TO ENVIRONMENT

A, illustrates an individual with large native capacities who is not living up to his capacities. B, illustrates an individual with large native capacities who has developed more of these capacities. C, illustrates an individual with small native capacities who has not developed the small amount he has. D, illustrates an individual with small native capacities who has made much of the abilities he has.

a decent home, an adequate diet, and recreational and educational facilities for every child. And, in so doing, they would, without doubt, raise the intellectual and social level of the community.

From the theoretical discussion of the relationship between heredity and environment it is obvious that the control of both heredity and environment is important in improving the race. Heredity determines the limits within which an individual can develop, while the environment to which the individual reacts determines the development which actually does take place.

Few persons realize their inherited potentialities. A schematic representation may make this point clearer. In

the diagram the larger circle represents the limits within which an individual may develop. The pattern within the circle represents the extent to which he actually does develop. The margin between the actual and the potential development represents the area of individual responsibility. Parents and teachers should help every child develop his capacities to the fullest extent of which he is capable, and should give social approval to all who do the best they can, regardless of the absolute amount of achievement. The parable of the talents presents this truth. The commendation of "good and faithful servant" is bestowed on each person who uses to good advantage the talents given him.

QUESTIONS FOR CLASS DISCUSSION OR STUDY GROUPS

1. How does the individual begin life?
2. Why do some children resemble one or both parents while other children do not?
3. What bodily structures are most clearly inherited and least influenced by environment?
4. In what ways are diseases passed on from parent to child?
5. If parents are above average in some heritable characteristic, what would you expect of their children in respect to this characteristic?
6. Are all men created free and equal? Discuss
7. Are qualities developed by parents during their lifetime transmitted to their children? Discuss
8. Show how some traits in a child which parents have said are inherited can be accounted for by environmental influences
9. What is the relationship between heredity and environment?
10. What is the value to teachers of knowing the characteristics of a child's parents? Why is information about the parents and grandparents usually included in a complete case history?
11. What facts make it impossible to predict a child's intelligence or personality from a knowledge of his parents?
12. For a given expenditure of time, which would yield the larger returns in understanding the characteristics of a particular child: a direct study of the child, or a study of his heredity?
13. The following comments concerning children were made by teachers. Tell why you agree or disagree with them.

"G., who is a behavior problem, is as his mother used to be in school. He has evidently inherited her lack of responsibility and her ability to lie himself out of an awkward situation."

"C, who is overweight, has probably inherited this characteristic from his mother."

"H is not very bright. He is also very bad-tempered and easily discouraged if things do not go as he wishes. His mother says he takes after his father."

"P is very bright because her father is a judge and her grandfather was a governor. Unfortunately tuberculosis runs in her mother's family and she is doomed to have a short life."

CHAPTER IV

PRENATAL INFLUENCES

Mary had a little cat
Which ate a ball of yarn
And when her baby cats were born
They all had mittens on.

The above incident is a striking illustration of alleged prenatal influence. It is not, however, more wonderful than some of the stories related of the prenatal influence of the human mother upon her child. From early times people have believed that the mother's thoughts and experiences directly influence the developing unborn child. What are the scientific facts regarding this question?

Does the food the mother eats affect the development of the child during the nine months before birth? Are birthmarks due to some experience of the mother during this period? Can a mother make the child more intellectual by reading serious books? What changes should the mother make in her daily life during the prenatal period? These are some of the questions frequently asked concerning the influence of the mother on the developing child.

Real Influences.—The baby's physical make-up may be affected by mechanical injury at birth, chronic alcoholism, morphinism, and serious disturbance of the nutritional condition of the mother, such as may be caused by a deficient diet or a serious illness like typhoid fever, but deformities such as club foot, birthmarks, and other malformations are the results of causes not under the conscious control of the mother.

Alleged Influences.—There is no connection between the mind of the mother and the mind of the child. The mother's wishing that the child be beautiful or her looking at beautiful things will not alter the child's features. Her

attendance at a circus and amusement at the clowns cannot be offered as the reason a child acts foolishly when he grows up. One mother, who desired her child to be musical, decided to study and listen to music during the prenatal period. But instead of devoting herself to music, this mother found her attention diverted to religious books.

"It didn't make any difference after all," the mother said after the child had grown up, "for my daughter did turn out to be musical, and she is not specially religious."

Birthmarks often suggest curious connections with something the mother has thought or done. There is no real connection, however. It is simply an unusual coincidence that a birthmark resembling a crab appears on a child whose mother had been bitten or frightened by a crab at some time during the prenatal period. To those who emotionally participate in the incident, however, the coincidence frequently seems like a causal relationship. Anatole France¹ in *Little Pierre* makes the following entertaining comment:

Madame Morin informed the company that I had a red spot on the left hip due to a longing for cherries which had come upon my mother in Aunt Chausson's garden before I was born. Whereat old Dr. Fournier, who had a great contempt for all such popular superstitions, remarked that it was lucky Madame Nozière had kept her desires within such modest limits during the period of gestation, since, if she had allowed herself to hanker after feathers, trinkets, a cashmere shawl, a coach and four, a town house, a country mansion and a park, there wouldn't have been skin enough on the whole of my poor little body to hold the record of such inordinate ambitions.

Length of Prenatal Period. — Although nine months is usually given as the duration of the prenatal period, the span of prenatal life may, in extreme cases, vary as much as five months. The Dionne quintuplets were born two months too soon and kept alive by the prompt application of many modern miracles of medicine. The shortest period at which a baby may be delivered alive from the mother's body is about 180 days, the longest period, about 330 days. Varia-

¹ Anatole France, *Little Pierre*, p. 12. New York: Dodd, Mead and Company, 1925. Quoted by permission of the publisher.

tions in the gestation period of three months are relatively normal.

Development during the Prenatal Period.— During the prenatal period the single cell with which the individual's life begins divides and subdivides until at the end of the period the fundamental structures of bone and nerves and muscles, the fundamental systems of circulation, respiration, and digestion are ready for functioning in the world outside the womb.

As early as the third week from the time of fertilization of the ovum there is a stir of life in the developing child (fetus). Among the early movements are the heart beat, the movements of the digestive tract, and the rhythmic contraction of the chest and thorax—preparatory to the act of breathing which comes at birth. Gross body response to external stimuli, specific responses, such as opening and closing of the mouth, most of the reflexes present at birth, some sensitivity and response to pressure, heat, cold, loud sounds, and severe pain are present before birth. Among the most significant prenatal activities are

the tonus adjustments of the body muscles in postural responses, including those of eye muscles.²

An incident of sensitivity to sound thirty-one days before the baby was born was reported by a pregnant woman. A sharp clang on the metal bathtub in which she was lying caused a sudden jump of the fetus unlike the usual movements to which the mother was accustomed. This tendency toward movement response of the human fetus to sound stimuli has been confirmed by a series of experiments under controlled conditions.³ This response was detectable from the beginning of the thirty-first week of prenatal life and

² Leonard Carmichael, "Origin and Prenatal Growth of Behavior," in *A Handbook of Child Psychology* (second edition revised), p. 121, Carl Murchison (Editor) Worcester, Mass. Clark University Press, 1933. Entire chapter, pp. 31-159, gives a most significant technical treatment of prenatal development.

³ L. W. Sontag and R. F. Wallace, "The Movement Response of the Human Fetus to Sound Stimuli," *Child Development*, VI (December, 1935), 253-258.

became more pronounced as the fetus approached the time of birth. In its many forms prenatal behavior is the precursor of the newborn's activities. Behavior as we observe it in infants is the result of a long series of preparatory activities beginning in the first weeks of prenatal life and arising "out of the complex situation in which they occur."⁴

Factors in Prenatal Development. — There are three possible factors in the development of behavior: (1) A sort of developmental urge — a progressive expansion of a predetermined total pattern and individuation of partial patterns within it. Such a developmental urge is chiefly responsible for individual differences among species. The colt walks the first day of its life; the rabbit, within the first two weeks after birth, while the human infant does not attain comparable motor ability within a year's time. (2) Factors in the environment which influence inherited tendencies. Thus, the less basic and more complex motor development may be speeded up by special training, and still greater effect of environment demonstrated in respect to complex mental and social ability. (3) Stimuli that arise in connection with metabolic processes, such as blood changes and intraorganic dynamics of growth. Differences attributable to factors in the "internal environment" are clearly evident, for example, in the marked developmental deviations due to pituitary disturbance. Thus, all through life, development takes place as a result of hereditary urges, environmental stimuli, and the impetus of the growth process itself.

Whatever effect the mother has upon the prenatal development of her child, other than through gross mechanical injury, is through her circulatory system. Just as food and oxygen pass through the walls of the blood vessels to build and repair the bodies of adults, so food and oxygen from the mother's blood stream indirectly pass through the walls of special blood vessels to the fetus. Toxins may reach the fetus by the same avenue. An interesting illustration of this fact was the real and definite increase in heart rate of

⁴ Leonard Carmichael, *op cit.*, p. 135.

the fetus resulting from maternal smoking⁵ Apparently, this increase in fetal heart rate was due to the passage of the toxic products of tobacco smoke into the fetal circulation. Waste products are passed on in the same way Therefore, anything that seriously affects the nutrition of the mother may affect the physical development of the child. For example, insufficiency of calcium in the mother's food may result in poor teeth or bones for the child, for about four or five months before birth the calcification of the deciduous teeth begins There is an old saying, "A tooth for every child" Such a loss is usually unnecessary so long as there are cows to supply milk and farmers to raise vegetables for the mother's diet, and so long as the mother does not neglect the care of her teeth during the period

Hygiene of the Mother.—Eating the right kind and amount of food, sleeping eight hours at night, resting or sleeping an hour in the afternoon, walking, doing housework, or taking any moderate exercise never carried to the point of fatigue, and avoiding prolonged worry and excitement are the chief ways in which a mother can favorably influence the development of her child before birth. An emotional state or marked fatigue in the mother appears to result in an increased fetal activity⁶ As a preventive of rickets in the baby some nutrition experts advise expectant mothers to take cod-liver oil. As a preventive of anemia, a higher intake of iron is indicated. During the last three months of pregnancy the need of iron is increased approximately one third above the usual fifteen milligrammes per day. The whole grains, the green vegetables, egg yolk, oysters, liver, and prunes are among the foods richest in iron.

The amount of exercise mothers can safely take during the prenatal period varies greatly The Alaskan mother sometimes drives a dog team far out on the frozen Arctic, mile

⁵ L. W. Sontag and Robert F. Wallace, "The Effect of Cigaret Smoking during Pregnancy upon the Fetal Heart Rate," *The American Journal of Obstetrics and Gynecology*, XXIX (January, 1935), 77-83

⁶ L. W. Sontag and Robert F. Wallace, "Preliminary Report of the Fels Fund Study of Fetal Activity," *The American Journal of Diseases of Children*, XLVIII (November, 1934), 1050-1057

after mile, jogging along behind the dogs, only a few days before her baby is born. To avoid violent exercise, such as tennis, skating, horseback riding, lifting heavy weights, and riding over rough roads, is usually recommended. Studies made by the Children's Bureau show a larger proportion of deaths among babies whose mothers work hard up to the time their children are born than among others. Factors other than the work itself doubtless contribute to this higher mortality. One eminent specialist recommends that the mother follow her usual way of living, if this way is reasonably hygienic.

The influence of the child on the mother is often greater than the influence of the mother on the child. In the United States there are still annually thousands of preventable deaths. Many of these tragedies may be prevented by an early medical examination. This examination may reveal conditions that make child-bearing unsafe for the mother, or conditions which can be corrected if taken in time. The physician should continue his supervision during the prenatal period. A careful program of maternal and infant hygiene, including postnatal supervision of the infant results in a significant lowering of infant mortality and an increase in happy childhood.

QUESTIONS FOR CLASS DISCUSSION OR STUDY GROUPS

1. Give illustrations of alleged influence of the mother's experiences on the unborn child
2. What can the mother do to influence the development of the child during this period?
3. In what way might a prolonged emotional disturbance of the mother affect the child? A disease such as typhoid fever? Tuberculosis? Syphilis?
4. What is the usual length of the prenatal period? Within what limits does it vary?
5. May a child that is wanted have any prenatal advantages over an unwanted child?
6. Visit and study the work done in a maternity welfare center.

TEST

*Knowledge of Heredity, Prenatal Influences, and
Characteristics of the Baby at Birth*

A

*Put a cross (X) in front of those statements which you think are true,
and a zero (0) before those you think are false*

1. — There are biological advantages of having two parents instead of one
2. — The individual begins life as a single cell
3. — A girl whose mother has learned to sew expertly will probably inherit this ability
4. — At birth a child's mind is like a piece of blank paper upon which we may write what we will
5. — One effect of modern warfare is to improve the race by eliminating the unfit
6. — Feeble-mindedness tends to run in families.
7. — We know more about the inheritance of mental than of physical traits
8. — Extensive research on relative influence of nature and nurture has not progressed far beyond Galton's early conclusion
9. — If a mother is badly frightened during pregnancy, her fright will have a definite effect on the baby.
10. — A child's inherited characteristics are likely to be seriously influenced by traits inherited from a great-grandfather who was a noted criminal.
11. — A direct study of the characteristics of a given child is of more value in understanding the child than a study of his heredity
12. — Heredity determines the limits within which an individual can develop
13. — Prenatal development has been shown to be a process of enlarging a miniature pattern laid down in the germ cell
14. — All men are by nature created free and equal.
15. — Strength of arm is more modifiable by environment than length of arm
16. — What a child will become can be accurately predicted from his parents' characteristics.
17. — The offspring of parents exceptional in some respect are more likely to be exceptional in that respect than the children of average parents
18. — Children differ from their parents and from their brothers and sisters because so many combinations of inherited characteristics are possible.

- 19 — One value of knowing the heredity of a child is to prevent the teacher from expecting too much or too little of him.
- 20 — Brain cells increase in number after birth
- 21 — If a mother reads serious books and studies before her child is born, the child will be more intellectual than if the mother had spent the time frivolously
- 22 — Whatever seriously affects the nutrition of the mother may affect the development of the child
- 23 — A lack of calcium in the mother's diet will probably result in poor development of the teeth and bones of her child.
- 24 — The fetus obtains its food and oxygen indirectly from the circulatory system of the mother.
- 25 — The germ of syphilis has been shown to infect the infant before birth
- 26 — The ratio of hereditary to environmental influences on development of intelligence remains constant throughout childhood.

B

Check all the characteristics, diseases, or defects which are generally agreed to be heritable (biological inheritance).

color of eyes	ability to play the violin
curly hair	high intelligence
a Roman nose	tuberculosis
exceptional strength of arm	all nervous disorders
number of bones in the body	length of arm
linguistic ability	feeble-mindedness
an ear for music	shape of head

C

Check all the characteristics which you would expect an average child to have at birth or during the first two weeks.

weight between six and nine pounds
length between six and twelve inches
pulse rate of from 130 to 150 a minute
random movements of different parts of the body
following a moving object with both eyes
vague feelings of comfort and discomfort
love for his mother
blinking at a moving object
reaching for objects
picking up a stick with his thumb and fingers
recognizing his mother's face
turning toward a light of moderate intensity
grasping a rod placed in his hand
making vigorous general movements when his activity is restricted

turning his head to the side
 showing response to loss of support
 holding his head upright several minutes
 responding in different ways to certain tastes: sour, bitter, sweet,
 salty

sitting alone	sucking	hunger
crying	clapping hands	sneezing
laughing	thirst	yawning

BIBLIOGRAPHY

Lack of space has required that some topics be treated rather sketchily and some phases of the larger aspects of child study omitted entirely. The bibliography, therefore, contains books and articles which will supply some of the various deficiencies of which different readers may be conscious. It also provides source material which the student should consult. More extensive bibliographies are available on adolescence, child study, heredity and eugenics, family relationships, health, play, religion and ethics, sex education, and vocational guidance. The following are good sources for bibliographies of informative books for parents:

National Council of Parent Education, Inc., 60 East 42nd Street,
 New York City

National Congress of Parents and Teachers, 1201 16th Street,
 N. W., Washington, D. C.

Child Study Association, 221 West 57th Street, New York City.

The Child Development and Parent Education Bureau, New York
 State Education Department, Albany, New York. Bibliography for
 Parents and Teachers, 1933

Office of Education, Department of Interior, Washington, D. C.

Children's Bureau, U. S. Department of Labor, Washington, D. C.

University of Iowa, Child Welfare Pamphlets give parents and
 teachers recent scientific findings in a readable form

SELECTED BIBLIOGRAPHY

BRENNEMANN, JOSEPH (Editor) *Practice of Pediatrics*. Four volumes,
 Hagerstown, Md. W. F. Prior Co., Inc., 1937

An excellent source book of best pediatric practice, consisting
 of forty-three chapters, each written by a specialist on the topic.

CHANEY, L. B., and MCGRAW, M. B. *Reflexes and Other Motor Activities in Newborn Infants. A Report of 125 Cases as a Preliminary Study of Infant Behavior*. New York. Bulletin of the Neurological Institute, No. 2 (March, 1932) Pp 1-56

One of the most complete studies of reflexes in infants, made at birth and during the first ten days.

- COGHILL, G. E. "The Integration and Motivation of Behavior as Problems of Growth," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVIII (March, 1936), 3-19.

A summary of the author's extremely important work on the correlation of structure and function in the development of behavior.

- DEWEY, EVELYN. *Behavior Developments in Infants. A Survey of the Literature on Prenatal and Postnatal Activity, 1920-1934*. New York: D Appleton-Century Co., 1934 Pp. xvii + 619

An excellent summary of investigations published during a fifteen-year period relating to the growth and activities of the child in utero, shortly after birth, and during the period of infancy.

- GOODENOUGH, FLORENCE L. *Developmental Psychology, An Introduction to the Study of Human Behavior*, Chapters III to VI. New York: D. Appleton-Century Co., 1934 Pp. xvii + 619.

A clear and detailed account of the mechanism of heredity and prenatal development

- GROVES, GLADYS H., and ROSS, ROBERT A. *The Married Woman, A Practical Guide to Happy Marriage* New York: Greenberg, Publisher, Inc., 1936 Pp. ix + 278

A frank and non-technical discussion of certain practical problems of marriage.

- IRWIN, ORVIS C. "The Amount and Nature of Activities of Newborn Infants under Constant External Stimulating Conditions during the First Ten Days of Life," *Genetic Psychology Monographs*, VIII, No. 1 (1930), pp. 1-92

A study of the reactions of infants under controlled conditions

- IRWIN, ORVIS C., WEISS, LA BERTA A., and STUBBS, ESTHER M. *Studies in Infant Behavior, I*. University of Iowa Studies in Child Welfare, Vol. 9, No. 4. Iowa City, Iowa: University of Iowa, 1934

A significant advance in the study of infant behavior by means of an objective recording technic.

- JENNINGS, H. S. *The Biological Basis of Human Nature* New York: W. W. Norton and Co., 1930 Pp. xviii + 384

A popular presentation of the facts of heredity by a person who has himself made a notable contribution to the research in the field.

- *Genetics*. New York: W. W. Norton and Co., 1935. Pp. xi + 373

A well-considered emphasis on the genetical factors of race improvement.

JENSEN, KAI "Differential Reactions to Taste and Temperature Stimuli in Newborn Infants," *Genetic Psychology Monographs*, XII (November-December, 1932), 361-479

An excellent example of technical laboratory experimentation on a specific aspect of child development

KENYON, JOSEPHINE HEMENWAY. *Healthy Babies Are Happy Babies*. Boston Little, Brown and Co., 1934. Pp xv + 321

Valuable suggestions on the care of mother and child written by a well-known specialist

LEAHY, A. M. "Nature-Nurture and Intelligence," *Genetic Psychology Monographs*, XVII, No 4, 1935, pp 236-308

A comparison of the relative influence of heredity and environment on two groups of children, 194 adopted children matched with 194 "own" children, living in approximately identical environments.

MURCHISON, CARL (Editor). *A Handbook of Child Psychology* (second edition revised) Worcester, Mass.: Clark University Press, 1933. Pp xii + 956

A creative summary of investigations relating to the major areas of child psychology by experts in each field.

PRATT, KARL CHAPMAN, NELSON, AMALIE KRAUSHAAR, and SUN, KUO HUA. *The Behavior of the Newborn Infant*. Columbus, Ohio: Ohio State University Press, 1930. Pp xiii + 237.

A minute, controlled, and quantitative study of newborn infants.

ROSE, MARY SWARTZ. *Feeding the Family* (third edition). New York: The Macmillan Company, 1929. Pp. xvii + 459.

A clear, comprehensive presentation of a diet adequate in every respect, which will aid individuals of all ages and conditions of life to meet their daily food requirements. Pages 110-117 describe briefly food for the prospective mother.

NEWMAN, HORATIO H., FREEMAN, FRANK N., and HOLZINGER, KARL J. *Twins; a Study of Heredity and Environment*. Chicago: University of Chicago Press, 1937. Pp xvi + 369

A technical statistical and case study attack on the problem.

SHERMAN, MANDEL, SHERMAN, IRENE, and FLORY, CHARLES D. "Infant Behavior," *Comparative Psychological Monographs*, XII (April, 1936), 1-107.

A report of the results of an investigation, under carefully controlled conditions and with standardized apparatus and technics, describing the responses of infants, ranging in age from several

hours to sixteen days, to pain, pressure, hampering of movements, and other stimulation

SHIRLEY, M M *The First Two Years* (three volumes) Minneapolis, Minn University of Minnesota Press, 1931, 1933 Pp. xvi + 227, xvi + 513, xi + 228.

A wealth of detailed information on the development of infants based on observation of the same infants over a period of two years.

United States Department of Labor *Keeping Well Baby Well* Folder No 9 (revised). Washington, D C. United States Department of Labor, Children's Bureau, 1930 Pp 8

United States Department of Labor *Sunlight for Babies* Folder No 5 (revised). Washington, D C: United States Department of Labor, Children's Bureau, 1931 Pp 8

United States Department of Labor *Prenatal Care*. Publication No. 4 (reprint) Washington, D C. United States Department of Labor, Children's Bureau, 1931. Pp. v + 71.

An excellent booklet for prospective mothers, covering the important aspects of prenatal care.

United States Department of Labor *What Builds Babies Mother's Diet in Pregnant and Nursing Periods* Folder No 4 (revised). Washington, D C. United States Department of Labor, Children's Bureau, 1933. Pp. 8.

Dietary suggestions.

United States Department of Labor. *Infant Care* (reprint). Washington, D. C: United States Department of Labor, Children's Bureau, 1933. Pp. 138

ZABRISKIE, LOUISE *Nurse's Handbook of Obstetrics* (third edition revised). Philadelphia: J. B Lippincott Co, 1933. Pp. xxiv + 537.

Practical, detailed, expert directions for care of mother and child.

— *Mother and Baby Care in Pictures* Philadelphia: J. B. Lippincott Co, 1935 Pp. ix + 196.

A pictorial presentation of the most important topics of interest to a mother from the time of conception until her child reaches the toddling stage.

PART II

THE EARLY PRESCHOOL PERIOD THE FIRST TWO YEARS

CHAPTER V

DEVELOPMENT DURING THE FIRST TWO YEARS

The little child lives in a different world from adults. It is as though we adults were constantly confronted by giants and other grotesque creatures larger than ourselves. This is one reason, perhaps, why the little child has such an ardent yearning for something soft and living and smaller than himself to play with and cherish. His small size makes his parents, the furniture, and animals appear monstrous. What appears to adults as a small elevation must seem to the toddler a dizzy height. An ordinary room to him appears excessively large and recessed. Many objects, from his perspective, are perceived in distorted form.

Still more distorted is his world of thought. Many objects and acts have not yet acquired the significance that comes from experience; even the words he uses and hears may deviate widely from their meaning to adults.

Yet in the first two years of life the child makes stupendous progress in understanding the world and the many unreasonable, inconsistent people in it. In those two years he lays the foundation for his further development. The baby grows. He learns to achieve a fair degree of control over his entire body, to talk, and to face difficulty or evade it in devious ways.

In tracing this development, the following questions should be considered: How does the baby's physical appearance change during the first two years? What does he learn to do with his hands? What progress does he make in moving from place to place? What does he learn to say? Does he think? Does he remember people and events? Does he love, fear, and hate? Has he gained in ability to get along with people? In short, what are the usual patterns

of behavior at this stage of life? What constitutes exceptional behavior? What conditions inherent in the child and what influences in the environment make him behave as he does? In spite of individual differences are there certain abilities which may be expected of the majority of two-year-old children?

In reading the succeeding pages it must be remembered that most of the information about developmental sequences has been obtained from a relatively small number of children, most of whom belonged to somewhat privileged groups. Strictly speaking, the generalizations reported apply only to certain children in certain environments studied by certain methods. The results may be influenced by the unconscious bias of the observer, by the incompleteness of information on certain items, by special child training, and by the culture pattern in which the children have grown up.

Nevertheless, among the individuals studied there seems to be a fairly consistent, orderly sequence of development. To be sure, there are differences in details of development and marked variation in rate, but the broad basic steps are taken by the majority of babies that have been observed.

PHYSICAL GROWTH AND HEALTH

Height and Weight. — The rate of growth which was so tremendously rapid during the prenatal period begins to slow down a little at birth. It has been roughly estimated that there is a five million per cent increase from conception to birth; a two hundred per cent increase during the first year, and somewhat less than a thirty per cent increase during the second year. A baby may be expected to double his birth weight during the first five or six months, gaining, on the average, four to eight ounces a week. By the end of the first year he will probably treble it, gaining approximately two to four ounces weekly. At eighteen months he is likely to weigh three to four times his weight at birth and to gain only two to four pounds more by the end of the second year.

The gain in height is at first slower than the gain in

weight, but after one year the greatest increase in proportion to initial status is in height. Height is usually doubled by the fourth to fifth year and trebled by the twelfth or fourteenth year. Boys tend to be a little larger and heavier for their length than girls. Of course there are wide individual differences in both height and weight.

To gain in height and weight is normal. All healthy young animals grow. Loss in weight or failure to gain in weight for several weeks or in height for six months suggests the need of a physical examination of the young child and a study of his diet and daily schedule.

An effective method¹ of obtaining a definite idea of the physical development of a child is a series of photographs giving both front and side view of the child. The pictures are taken in three-month periods.

Although all phases of growth take place more rapidly the first year than later, all parts of the body do not grow at equal speed. During these two years the nervous system and the tonsils, lymph glands, and other lymphoid tissues grow more rapidly than the body as a whole.² No two measurements of different parts of babies' bodies are highly intercorrelated.³ Two of the most closely correlated measures are hip width and weight. It is difficult to predict from indices at an early age the individual's later body build.

Average figures for height and weight should not be used as standards or norms. At best, the normal weight is a range, not a point. So far as we know, there may be an undetermined optimum height-weight relationship for every individual which constitutes the "norm" for him.

Over several generations an increase in stature has become evident. This increase may be attributed chiefly to improved

¹ H. D. Clough and John R. Murlin, "Permanent Records of Growth and Nutrition of Children," *The American Journal of Diseases of Children*, XXXVI (September, 1928), 425-433.

² R. E. Scammon, "The Measurement of the Body in Childhood," in *The Measurement of Man*. Minneapolis, Minn.: University of Minnesota Press, 1930.

³ Harold D. Carter and Ruth H. Krause, "Physical Proportions of the Human Infant," *Child Development*, VII (March, 1936), 60-68.

diet and health habits. Even in the same generation the effect of diet on growth has been noted. Linear growth has been increased over and above recent standards by the daily addition of one teaspoonful of high-grade cod-liver oil (340 to 400 U. S. P. units of vitamin D).⁴ Irradiated milk containing 60 to 135 U. S. P. units resulted in growth up to recent standards. When the children were exposed to sunshine, they exceeded the standards. In a well-managed institution the children, after a short stay, tend to exceed in stature the entering group of the same age. The average size of infants of Japanese parents born in America is greater, except for the span of the arms, than that of infants of the same age born in Japan. The body proportions, however, are generally the same for Japanese infants whether they are born in Japan or in America.

Height and weight should not be overemphasized. Resistance to disease and general vigor and vitality as well as growth should be considered in judging any aspect of environmental influence.

Teeth.—At birth the baby's jaws contain all the first set of teeth and all the permanent teeth except the second and third molars. By the end of the first year of life the calcification of the crowns of the deciduous, or primary teeth, is completed. During the third year the calcification of the roots is completed.

The first tooth—usually the lower central incisor—is likely to appear between the seventh and the ninth month. A few babies are born with this tooth. The four front teeth, both upper and lower, may be expected to erupt two or three months after the first tooth appears. When the baby is one and a half years old, he usually has one molar on each side of his jaw, and a total of eight teeth in sight. At two years he may be expected to have cut sixteen teeth.

It is evident that dietary defects during the first two years of life, as well as the nutrition of the mother during the

⁴ Genevieve Stearns, P. C. Jeans, and Vera Vandecar, "Effect of Vitamin D on Linear Growth in Infancy," *The Journal of Pediatrics*, IX (July, 1936), 1-10.

prenatal period, can affect the structure of the deciduous teeth and actually do result in an increase in tooth decay five or ten years later. Tisdall⁵ demonstrated the effect of a single food substance, vitamin D, on the teeth of children living in an institution. One group continued to eat the standard diet which supplied all the essential food elements with the exception of vitamin D. The other group ate exactly the same diet with the addition of vitamin D daily. At the beginning and at the end of the year a careful dental examination was made. When the results of the two examinations were compared it was found that the group on the standard diet lacking in vitamin D had more than double the amount of decay in the deciduous teeth than the other group receiving exactly the same diet with added vitamin D.

Although there is conflicting evidence regarding the causes of dental caries, some investigators emphasizing the role of diet while others give weight to lactobacilli and the environment of the teeth,⁶ it appears to be possible to raise the resistance of teeth to decay by attention to dietetic factors. A diet built around milk, meat, eggs, vegetables, and fruit, with added vitamin in the form of cod-liver oil or other vitamin D preparations, comparatively low in sugar content is favorable to the development of healthy teeth and to the reduction of tooth decay. Fortunately the best diet for the teeth is the diet that results in the most perfect nutrition of the whole body.

Physical Defects. — To neglect physical defects during the first year in the hope that the child will outgrow them is not wise. During this year of most rapid growth, defects grow worse with proportionate rapidity. The more promptly they are corrected, the less opportunity they have of doing harm. Adenoids, diseased tonsils, and defects of posture, feet, hearing, and vision should be attended to as promptly as the physician advises. Poor posture often appears during

⁵ Frederick K. Tisdall, "The Effect of Nutrition on the Primary Teeth," *Child Development*, VIII (March, 1937), 102-104.

⁶ Russell W. Bunting, "Diet and Dental Caries," *The Journal of the American Dental Association*, XXII (January, 1935), 114-122.

the first year. One baby who sat erect at six months began to slump by the end of the first year and to stand with hollow back and protruding abdomen. Why? Because the muscles were becoming flabby due to a rachitic condition or a less serious type of calcium deficiency. Sunshine, milk, and cod-liver oil are the chief dietetic factors in improving muscular tone.

Anaemia, if present, should be detected and treated. Paleness of the mucous membranes, of the gums, and of the flesh under the finger nails, and a slow return of color when the skin is pressed are usually considered to be signs of anaemia. A more thorough diagnosis calls for a blood count, haemoglobin test, and observation of the size of the red blood corpuscles in the retina of the eye. Although anaemia is a disease that is frequently baffling in its causation, dietary factors and sunshine appear to play a prominent part in its prevention, and, in many cases, in its cure. A combination of iron preparations, vitamin B, and copper was found to result in marked increases in haemoglobin and red blood cells. In the Philippines experimental work with monkeys and rats showed an increase of 167 per cent in their red blood cell count following a twenty-minute exposure to the sun at noon. In anaemia, as in other physical aspects of development, prompt expert attention to deviations from the normal should be given.

Sleep — Judged by the proportion of time spent in sleeping, this activity appears to be the infant's main business. The Dionne quintuplets, prior to their second birthday, had been getting about sixteen hours of sleep daily — approximately twelve hours at night; an hour and a half in the morning and two hours or more in the afternoon. At the age of two, the morning nap was eliminated and the afternoon sleep was gradually reduced to about an hour and a half. Bedtime was postponed from 6:30 until 7. Thompson⁷ obtained the following average sleeping hours reported by parents for children from four months to two years old:

⁷ Helen Thompson, "Sleep Requirements during Infancy," *Psychological Monographs*, XLVII, No. 2 (1936), 64-73

Age in months	4	6	8	12	16	20	24
Average sleeping hours	19.8	18.3	17.9	17.1	16.7	16.4	15.6

Other investigators⁸ reported, on the average, somewhat fewer hours of sleep daily: 13.42 hours daily for the second year, twelve hours of this total being night sleep. The two outstanding characteristics of sleeping habits during the period of infancy are the decrease in average sleeping time during the year and the variability among individual children.

Infants' sleep is less variable from night to night than that of older children. It also appears to be much more active, especially at night.⁹

DEVELOPMENT OF MOTOR ABILITY

The first year is the most important for the child's development in body control and locomotion. At birth he was a helpless, squirming, fumbling bit of humanity. By the end of a year, he has become an individual who can do things, make events occur, and is ready to explore a wider world.

Many of these motor abilities dovetail into one another. However, in order to understand each more clearly, it will be desirable to discuss in turn development along each of a number of lines, keeping in mind the tendency toward an orderly sequence. The groups of children studied tended to follow a general pattern of postural control—control of head and neck first, then the chest, back, and lower trunk, and finally the legs. (See Table I.) This fundamental motor control is followed by hitching, creeping, and crawling which usually, during the second year of life, eventuates

⁸ E. A. Bott, W. E. Blatz, N. Chant, and H. Bott, "Observation and Training of the Fundamental Habits in Young Children," *Genetic Psychology Monographs*, IV (July, 1928), 1-162.

⁹ Dorothy P. Marquis, "A Study of Activity and Postures in Infants' Sleep," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLII (March, 1933), 51-69.

in walking. Paralleling these large muscle activities is the gradual increase in effective use of the hands. All functions, in spite of occasional reversals, are carried forward, the performances of the older child in advance of those of the younger.

At the same time it should be kept in mind that all children do not follow the same sequence of motor development. Although Shirley's sequences in Table I agree closely with the development reported in baby biographies and for 300 New Haven infants, there is no "inviolable sequence in specific performances." Especially do infants differ in the ages at which they acquire each skill. The range in time of appearance of a particular motor ability may be from ten to twenty weeks, or, in the case of standing or walking, from twenty to thirty weeks. The story of the development of motor ability is an account of changes occurring in individuals growing up under definitely described environmental conditions.

Postural Control. — In each infant certain major accomplishments in muscular control are fairly obvious over the period of a year. At birth the baby cannot even hold his head up. At four to six months of age he is able to hold his head erect and steady. During the seventh to the ninth month practically all normal children learn to sit alone. Sitting up earlier than the usual age should not be encouraged because it is a strain on the child's back to sit up at five months. If at that age he desires to see more of the world, he can be turned on his stomach so that he can raise his head and look about him better. During this time he is also learning to grasp and retain the objects placed before him.

Efforts at Locomotion. — After having mastered fairly well the muscles of the upper part of his body, he turns his attention to his toes, kicking, and squirming, and standing with support by the end of his first year. It has already been noted that very early children push with the feet against any resistance that is offered. These pushing, kicking, stepping movements are precursors of walking proper.

TABLE I
STAGES OF MOTOR DEVELOPMENT¹⁰

DESCRIPTION OF STAGE	NO OF CASES	AGE IN WEEKS		
		Q ₁	Median	Q ₃ *
First order skills				
On stomach, chin up	22	2 0	3 0	7 0
On stomach, chest up	22	5 0	9 0	10 0
Held erect, stepping	19	11 0	13 0	15 0
On back, tense for lifting	19	14 0	15 0	18 0
Held erect, knees straight	18	13 0	15 0	19 0
Sit on lap, support at lower ribs and complete head control	22	15 0	18 5	19 5
Second order skills				
Sit alone momentarily	22	20 5	25 0	26 0
On stomach, knee push or swim	22	22 0	25 0	27 0
On back, rolling	19	25 0	29 0	32 0
Held erect, stand firmly with help	20	29 0	29 5	33 0
Sit alone 1 minute,	20	27 0	31 0	34 0
Third order skills				
On stomach, some progress	17	32 5	37 0	41 0
On stomach, scoot backward	16	34 0	39 5	45 5
Fourth order skills.				
Stand holding to furniture	22	41 0	42 0	45 0
Creep	22	41 0	44 5	45 0
Walk when led	21	37 5	45 0	45 5
Pull to stand by furniture	17	42 0	47 0	49 5
Fifth order skills				
Stand alone	21	56 0	62 0	66 0
Walk alone	21	59 0	64 0	67 0

* The first line of this table should be read as follows 22 children were observed on the ability to hold chin up while lying on the stomach One-fourth of these acquired this ability in two weeks, while another fourth required 7 weeks. Half attained the ability at 3 weeks of age This group of infants was, for the most part, children of the professional class.

Success at Locomotion.—At the same time he has achieved independent locomotion by creeping and hitching. The next steps leading to walking alone follow in succession pulling himself up to standing position beside his crib or a chair and edging along the side of a bed or couch. Walking alone must be an exciting adventure for the baby. He is

¹⁰ Mary M Shirley, *The First Two Years. A Study of Twenty-Five Babies, Vol I Postural and Locomotor Development* p. 99. Minneapolis, Minn. University of Minnesota Press, 1931.

unsteady on his feet at first and uses his arms and hands in maintaining his balance somewhat as a novice in skating does

Walking — A few children walk alone at the end of the first year, the average child acquires this ability by the age of fourteen months, and the markedly retarded not until two years or later. Girls tend to walk a little earlier than boys. Perfecting walking ability is one of the important achievements of the second year. The first ventures in walking are continued, until by the end of the year the child can walk without thinking about it. While learning to walk, the child has no eyes or ears for scenery or conversation, just as the adult, while learning to ride a bicycle, cannot let his attention wander over the landscape. As the process of walking becomes more automatic, he can turn his attention to other things.

Incentive to go some place often affects a baby's first steps. He may take his first step one day and climb the stairs the next if his mother is upstairs. Climbing the stairs is not walking, but it is an indication that the baby has gained a new confidence in himself, following, or even preceding, his first step.

The age at which children learn to walk varies with their nutritional condition, weight, intelligence, rate of maturing, general health, the freedom of movement permitted them, and other factors. There is some evidence that the roly-poly, heavy baby walks later than the slender-built child, but body build has not been shown to be closely related to motor abilities. The retarding influence of rickets on age of walking has probably been overemphasized. Rachitic infants walk, but do not walk so well as children free from this disease. Gifted children, in general, walk only about a month earlier than children of average intelligence. The feeble-minded tend to lag behind the average by almost twelve months. Because of the possible multiple causation of delay in walking one must be cautious in attributing the delay in a particular case to any one factor, without careful study of the entire situation. For some easily fatigued children it may be

advantageous to delay walking until seventeen or eighteen months. Overfatigue should be avoided. All children need relaxation, some need a rest period as often as ten minutes every hour. A rest period before eating is frequently highly beneficial.

Walking gives the child a new perspective on the world. It broadens his horizon, it extends his world.

Running and Jumping — In addition to learning to walk the energetic baby also learns, during the second year, to run, climb, go up stairs, stand on one foot, and play ball—all in an intent, awkward way. He seems to be omnipresent on his active little legs. He can run away from his mother or play ball with his daddy who is standing three to seven feet away from him.

Hand Movements. — A baby's hands are very important instruments in helping him to learn about the world. They have more sense organs than any other part of the body of equal size.¹¹ Muscle senses and skin senses in the hand cooperate to give the feel and weight of objects.¹² A baby that never touched things would not have our common ideas about many objects. Babies are learning, not being obstinate, when they reach from the high chair to touch the coffee pot after the mother has warningly said, "Hot." As a result of this experience they may whimper a bit, but they are better off than if they were so protected that "hot" meant "can't touch for some mysterious reason." It is only by handling objects that babies learn to know "hot," "cold," "sharp," "soft," "smooth," and many other qualities. Accordingly, the baby should have opportunities for handling many different things, a few at a time, so that he will have clear, firsthand impressions of them.

As in postural control and learning to walk, so in learning to grasp objects there is a general progression of mastery of

¹¹ H. M. Halverson, "An Experimental Study of Prehension in Infants by Means of Systematic Cinema Records," *Genetic Psychology Monographs*, Vol. X (August-September, 1931) 107-286.

¹² H. M. Halverson, "The Acquisition of Skill in Infancy," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLIII (September, 1933), 3-48.

the skill As skill in the use of the hands increases the number of accessory movements such as kicks of the feet decreases There seems to be a trend toward economy of movement. Beginning during the second month with a vigorous waving of the arms in the vicinity of the object, development proceeds along the following general lines: closer approach to the object, contact with it, primitive squeeze, hand grasp, palm grasp, forefinger grasp. At the end of the sixth month more than half of the children examined by Gesell and Thompson¹⁸ showed an "unmistakable thumb opposition" in clasping a cube. By the ninth month practically all normal babies have learned to reach for, pick up, and hold objects of suitable sizes.

The course of learning, however, does not run smooth. For several weeks it sometimes seems as though the baby learned nothing There may be repeated reversals in the sequence but the general trend is forward

During the second year he manipulates things with increasing skill He can pull off his cap and stockings, open boxes, unscrew the lids of jars, put pegs into holes, scribble, draw a straight line on paper, turn the leaves of books one at a time, build a tower four or five blocks high The two-year-old will really play with toys instead of just "hustling things around." In the sand pile he learns to dig and to fill and empty little cups and pails. He will make mud pies, pull little wagons, steer his kiddy car around a chair, sweep with his little broom, and work in the garden with his little rake and shovel.

He should also engage in helpful activities. Even a two-year-old, if patiently taught, can help his mother. When being dressed he can learn to put his arms and legs through the proper openings. He can be taught to set the table One baby mischievously removed all the dishes after his mother had set it. Both processes require the same motor ability. The problem is to make the useful activity more satisfying to him than the annoying one. He should feed himself from

¹⁸ Arnold Gesell and Helen Thompson, *The Psychology of Early Growth*, p. 102. New York: The Macmillan Company, 1938

a spoon without much spilling and drink from a cup or glass. He has the ability to put away his toys when he has finished playing with them, and will do so if he has sufficient incentive or goal in mind. Sometimes the putting-away process can be made the last "game" of each play period. A child's level of motor accomplishment can be judged by his spontaneous play activity under certain optimum environmental conditions when he plays at the level of his ability.

A comparison of biographical studies with recent researches on motor development¹⁴ showed the children in the biographical studies to be more akin to Terman's gifted group than to unselected groups of children in average age of grasping, thumb opposition to fingers, sitting alone, standing without support, and walking. The child biographies have the advantage of showing motor development in relationship to other phases of development. They have the disadvantages of lack of uniformity and system in observation and recording.

Which hand do babies use most frequently? Recent systematic and consecutive observations and tests of infants¹⁵ show an early differentiation between the two hands in the amount of spontaneous activity, especially of the fingers, wrists, and other small-muscle groups. After six months of age the child may show preference for one hand in reaching for objects as well as in spontaneous activity. The hand preference appears to be accompanied by a "body preference" which manifests itself in the turning of the head toward the dominant side and greater activity of the whole musculature of that side. By the end of the first year the majority of children show a preference for one hand. The general preference for the right hand may have a physiological basis in the tendency toward greater activity in one side of the body.

¹⁴ Elizabeth B. Hurlock and G. McHugh, "Use of the Biographical Method in the Study of Motor Co-ordination," *Child Development*, VII (September, 1936), 161-168.

¹⁵ Minnie Giesecke, *The Genesis of Hand Preference*. Monographs of the Society for Research in Child Development, Vol. I, No. 5. Washington, D. C.: Society for Research in Child Development, National Research Council, 1936.

or a psychological basis, or a combination of the two. Parents or nurses, consciously or unconsciously, encourage babies to use their right hands in grasping objects, waving "bye-bye," holding a pencil, and other activities involving the use of one hand. Later the dominant hand receives a far greater amount of practice than the other hand due to its more frequent use in the early development of manual skills.

The development of the more skilful and preferred use of one hand does not proceed without regressions. Individual developmental histories show transfers in dominance, noticeably during the seventh and tenth months of age. At these times a tendency to use the neglected hand appears and then fades away again. The non-dominant hand plays a minor role. It is used for purposes of support or remains motionless while the other hand is active.

Except for the convenience of being right-handed in a world made for right-handed individuals there appears to be little advantage in the use of one hand in preference to the other. Because of poor teaching methods, if for no other reason, which too frequently result in an emotional upset of the child and may intensify language and reading difficulties, any attempt to force a child to change from one hand to the other is likely to be disastrous.

Retardation of Premature Infants.—The prematurely born infant is actually younger than the full-term infant as reckoned from the approximate date of conception rather than from birth. It is natural that he should appear retarded when compared with full-term infants born the same time. The premature infant, providing he is healthy, is not long in catching up with children born at term. Within five months of age the forty-two healthy prematurely born infants studied by Melcher¹⁶ scored within average limits on the Bühler-Hetzer infant scale, though they seemed retarded in postural control up to eighteen months of age. In personality this group of prematurely born infants were "gentle babies."

¹⁶ Ruth T. Melcher, "Development within the First Two Years of Infants Prematurely Born," *Child Development*, VIII (March, 1937), 1-14

Relationships between Motor Abilities and Mental Abilities — Motor and mental abilities have not been clearly differentiated during the first year of life. From the meager evidence available on the motor ability of the same children over a period of years it appears difficult to predict their level of achievement six months later.¹⁷ In regard to this relationship Bayley writes:

Although the accuracy of prediction between scores which correlate 0.63 is very low, and one would hesitate to carry such prediction far, we may say that on the basis of our results, the age of first walking is as closely related to three-year-old motor, or even mental ability, as is the whole battery of tests given at one year. We cannot, of course, tell whether this relationship will persist into later years.

The only factor that was positively related to both mental and motor scores was age of walking.

For the first year and a half growth in motor efficiency features prominently in measures of the mental ability pattern. A definite relationship between motor co-ordinations and mental abilities is therefore to be expected. Bayley¹⁸ reported a co-efficient of correlation of approximately 0.50. After this age the tests diverge in nature. Accordingly, there is less and less relationship except at the extreme of feeble-mindedness between motor abilities and mental abilities as measured by the tests. A similar lack of close relationship is usually found for older children and adults.

Effect of Training on Motor Development. — Certain basic motor abilities appear to develop independently of any formal training. According to Bridges,¹⁹ the urge toward locomotion, creative construction, and vocal communication which is so strong during the second year of life, is a differentiation of the "original, fundamental drive for individual survival." The pair of identical twins studied by Gesell and

¹⁷ Nancy Bayley, *The Development of Motor Abilities during the First Three Years*, Monographs of the Society for Research in Child Development, Vol. I, No. 1, p. 14. Washington, D. C. Society for Research in Child Development, National Research Council, 1935.

¹⁸ Nancy Bayley, *op. cit.*, p. 17.

¹⁹ Katherine M. B. Bridges, "The Development of the Primary Drives in Infancy," *Child Development*, VII (March, 1936), 40-56.

Thompson²⁰ increased their skill in handling cubes regardless of whether they had had special training. The twin who, at about one year of age, had been given six weeks' practice in climbing a short flight of stairs ultimately showed no superiority in this activity over her twin who had more recently been given two weeks' training. It seemed as though, in these early active weeks, there was little if any ultimate advantage in special practice in the activities which are indispensable to normal human development. McGraw²¹ likewise found that the increased training given to Johnny did not make him permanently superior to his twin brother, Jimmy, in the ability to crawl and creep, to sit up, to reach and grasp objects. These primitive forms of behavior appear to be learned whether they are taught or not. Moreover, Johnny's special experiences did not give him an advantage over Jimmy in the acquiring of unrelated new skills. Training, however, did make Johnny superior to untrained Jimmy in swimming, diving, climbing up and down inclines, skating, jumping, and manipulating stools and boxes. The initial superiority gave the twin receiving intensive training courage and self-confidence that the untrained twin did not show at the time. Later study indicated that the cessation of the special attention had a correspondingly deflating effect on the trained twin's personality.

Summary. — From the evidence on motor development now available several generalizations may be suggested:

1. The motor development of the first two years is continuous with the prenatal development that has already taken place.
2. Certain primary, basic aspects of development, such as postural control and walking appear to follow a sequence of stages fairly consistent in general pattern, though not in specific details or in speed, for the majority of babies. Learning, however, does not proceed on an even front, but

²⁰ Arnold Gesell and Helen Thompson, "Learning and Growth in Identical Infant Twins," *Genetic Psychology Monographs*, Vol. VI, No. 1 (January, 1929)

²¹ Myrtle B. McGraw, *Growth. A Study of Johnny and Jimmy*. New York: D. Appleton-Century Company, 1935

forges ahead in some phases while others are temporarily slowed.

3. The appearance of these basic abilities appears to be affected only slightly by training and divergent environmental factors, although practice and training may lead to a higher level of perfection than that at which they emerged
4. Other abilities, such as climbing stairs, swimming, and skating follow a far less definite sequence of stages and are more influenced by training and environmental factors.
5. There is considerable irregularity in behavior development during the first two years and wide individual differences among babies, not only in rate but in specific sequences.
6. In spite of reversals and delays the general trend of development during the first two years is definitely forward.

GROWTH IN VISUAL ABILITIES

Progress in seeing is so rapid that, by the end of the second year, babies have reached essentially the adult level of visual acuity. The fine art of looking at things appears to develop somewhat in this way: at birth, vague reactions to a moving light or bright object; by two or three weeks, ability to focus on the mother's face or hands or other nearby objects; in the third month, ability to follow objects moved horizontally at close range; by the end of the first year, ability to follow a bird or airplane in his field of vision. From a fixation on immediate objects the child's visual environment has expanded to take in the remote, the minute, the shadowy, and the obscure.

It is difficult to discover the age at which infants begin to discriminate between colors, because the colors must have an equal degree of brightness. Otherwise, the stimulation is not to the color alone. From the evidence now available it appears that a preference for colors is usually manifested after two months of age. Children below two years of age, however, usually failed in matching colors.

GROWTH IN LANGUAGE ABILITY

Language is an integral part of the child's total behavior. It is an expression of biological needs and psychological states. These are the stimuli to speech.

The infant goes through many stages in vocalization between the birth cry and proficiency in understanding and speaking the language which he hears. The first cries are made more or less mechanically in response to internal sensations of pain, hunger, or satisfaction. These cries differ in quality. The intermittent wail of hunger can usually be distinguished from the sharp, crescendo cry of anger; the brief, high-pitched, shrill scream of pain; the long-drawn, droning cry of drowsiness; and the eager crow of delight. It is difficult, however, to tell from the cry alone the mental state of the baby.

The First Words.—Genuine speech usually evolves through the following phases: (1) crying mechanically from hunger, pain, or any unusual stimulation; (2) grunting and cooing, quieted by familiar voice and music; (3) babbling continually, adding new sounds to his large repertory of syllables, sounds, and inflections; (4) repeating his favorite sounds interminably; (5) responding in appropriate ways to words heard, as for example, playing pat-a-cake at command or waving the hand when a person says "wave bye-bye"; (6) knowing brother or sister's name and names of a few objects, (7) imitating the sounds made by other persons which resemble his own babbling sounds; (8) imitating words spoken by others; and (9) saying single words, pairs of words, and sentences. No two babies follow this developmental sequence in exactly the same way. They do, however, grunt and babble before they use speech for social purposes. They talk their own language with its own intonations and inflections before they speak comprehensible words. They use pronouns some time after they have spoken their first word. During the first two years of life they make definite, though not continuous and uniformly patterned, progress toward speech.

By the end of the twelfth month a bright child may be expected to say two or three simple words, such as "dada, nana, mama, papa, man," and to try to repeat syllables or words spoken to him. Although a one-year-old baby can use very few words, he should be able to understand a good many. For example, he should respond by the appropriate action to the command *Go to the door* or *Shut the door* before he can say the words *door*, *go*, or *shut*. Gesell and Thompson²² found that only 40 per cent of the year-old infants studied said three words or more, whereas four weeks later 68 per cent had acquired this ability. Mead,²³ investigating fifty unselected children, found the average age at which they first used a word intelligently was 15.8 months. In the case of 144 feeble-minded children the median age was 34.4 months. The mother's report of the age at which her child speaks the first word is likely to be earlier than an examiner's report at his own firsthand observation. Shirley²⁴ found the median age at which twenty somewhat superior children spoke the first comprehensible word in the examiner's presence was sixty weeks, and that even with this small group of children the age varied by more than five months. Thus within groups of superior and average children wide differences are found in their acquisition of speech. Precocious language development has seemed to be associated with dependence upon adults and subnormal interest in large muscle activities.

Increase in Vocabulary during the Second Year. — After the first year of experimentation in speech the child's mastery of words grows rapidly. Bain²⁵ reported a knowledge of twenty-one spoken words at fourteen months and 645 at two years of age. The second and third years are the most

²² Arnold Gesell and Helen Thompson, *op cit*, p. 143

²³ Cyrus D. Mead, *The Relations of General Intelligence to Certain Mental and Physical Traits*, pp. 25, 26. New York. Teachers College, Columbia University, 1916.

²⁴ *Op cit*, Vol. II

²⁵ Read Bain, "The Self-and-Other Words of a Child," *The American Journal of Sociology*, XLI (May, 1936), 767-775.

important for his language development. He learns a rapidly increasing number of words each succeeding year until his rate of growth in vocabulary reaches a peak. The rapid increase in the use of words begins when he realizes that language is a means by which he may satisfy his needs.

Each study of vocabulary gives a different estimate of the average number of words that may be expected at a given age. The variation is due, in part, to differences in the mental ability of the children studied, differences in their environment, and differences in the method of estimating and recording the vocabulary. Reported vocabularies of individual two-year-old children show a range of from 6 to 1,127 words. Shirley's babies, on the average, had each spoken, in the examiner's presence, about forty different words by the age of two years; the range was from 6 to 126 words. The central tendency falls under 300 words. The preponderance of nouns used at the two-year level is reported with considerable consistency.

Length of Sentences. — During the second year there is not only an increase in vocabulary but also an increase in the ability to combine words into sentences. At first, single words are made to serve as sentences; then two-word noun-action sentences, such as "Water, drink," "Baby up," "Mamma, milk" are frequently used. Gesell²⁶ found that although 40 per cent of the fifty representative children examined used mere words, the rest of the group used simple sentences conversationally at two years, 60 per cent of these using sentences of two words or more, and 40 per cent sentences as long as six to eight words. At the end of the second year compound sentences occasionally begin to appear and are common by the end of the third year. The ability to combine familiar words into sentences increases remarkably between the eighteenth month and the second year. Exceptional two-year-old children can carry on extensive conversations with adults.

²⁶ Arnold Gesell, *The Mental Growth of the Pre-School Child*, p. 220. New York: The Macmillan Company, 1925.

Specific Language Abilities.— Specific language abilities are described in anecdotal records of individual babies, in reports of observation of children in natural situations, and in standardized tests. Tiedemann's child, when one year and four months old, showed his understanding of a variety of phrases, such as "fetch that," "leave that alone," "swat the fly," by accompanying the words with the appropriate actions.

Gesell reported that 65 to 84 per cent of the two-year-old children examined could "relate simple experiences or recent occurrences," "ask for things at table by name," "name five familiar objects such as key, penny, watch," "tell their first names, respond correctly to two out of five commands which test comprehension of prepositions, and listen to stories with pictures."

The new revision of the Stanford revision of the Binet test includes the following language abilities on the two-year-old level: identifying objects by name, identifying parts of the body, naming pictures of common objects, using spontaneously word combinations, and obeying simple commands.²⁷ All of these test items require the ability to understand or use words.

The mother may expect her two-year-old child to obey when he is told to put the ball in the box, to put the coat on the chair, to put the plate on the table, to show his tongue, and to carry out similar, simple commands expressed in words with which he is thoroughly familiar. The command should be given slowly and distinctly while the child's attention is fixed on the speaker.

Laughing and Smiling.— Laughing and smiling constitute an expressive language that communicates our feeling to others all through life. The smile sometimes seen at birth is no more truly a real smile than the fixed humorous expression on the face of Victor Hugo's *Homme Qui Rit*. It is merely a mechanical movement of the facial muscles. The first real smile may be expected during the second month of

²⁷ Lewis M. Terman and Maud A. Merrill, *Measuring Intelligence*, pp. 75-77. Boston: Houghton Mifflin Company, 1937.

life, characteristically in response to a social situation usually to the mother's smile.²⁸ During the two months following their acquisition of this ability babies tend to smile indiscriminately in response to praise or blame, to smiles or frowns. At about the fifth month, however, babies are likely to stare at or withdraw from strangers and to reserve their smiles for familiar faces. Toward the end of the year they begin to welcome strangers more cordially. Laughter at smiles, nods, and moving things usually occurs before the sixth month. Eventually, both smiles and laughter become diversified and integrated with other behavior patterns to indicate various feelings of pleasure.

MEMORY

According to Wordsworth the baby has already forgotten a great deal at birth

Our birth is but a sleep and a forgetting . . .
Not in entire forgetfulness,
And not in utter nakedness,
But trailing clouds of glory do we come . . .

Peterson and Rainey²⁹ agreed to some extent with Wordsworth when they wrote:

There are good grounds for believing that the newborn child comes to the world already with a small store of experiences and associated feelings and shadowy consciousness.

The existence of memory before speech is difficult to detect. Nevertheless, early in the first year children respond to places and faces in ways which indicate a trace left by previous experiences. Parents reported, on the average, that their babies recognized them at about ten or eleven weeks of age. There are a number of anecdotal accounts of memory during the first year of life. The first sign of memory which Miss Shinn noticed in her niece occurred in the seventh week

²⁸ R. W. Washburn, "A Study of the Smiling and Laughing of Infants in the First Year of Life," *Genetic Psychology Monographs*, VI (1929), 397-537

²⁹ Frederick Peterson and L. H. Rainey, "The Beginnings of Mind in the New Born," *Bulletin of the Lying-in Hospital of New York*, VII (June, 1910), 121.

when she turned her head to look for something quite out of sight. Dearborn's baby showed a similar immediate kind of memory when he turned his head as far as he could to look at a lamp which he had previously seen. Mrs. Fenton's boy showed another kind of memory in the twenty-ninth week when he put a piece of zwieback directly in his mouth, whereas the first time zwieback was given him he grasped it, shook it like a rattle, and put it in his mouth unintentionally. The satisfaction which he felt in munching the zwieback the first time probably made the memory of it vivid enough to produce the response of cramming it immediately into his mouth the next time it was offered. In the twenty-fourth week Mrs. Moore's boy recognized his grandfather after he had been away for two weeks. Few instances of memory during a month's interval occur before the end of the second year. Often year-old babies pain their parents by forgetting them entirely after they have been away for a few weeks, but the two-year-old can remember his father when he has been away several weeks or longer. Gesell found that 93 per cent of the nine-months-old babies studied look for a fallen spoon with which they have been playing. Eighty-six per cent will at twelve months secure a cube with which they have previously been playing and which is covered with an inverted enamel cup. Buhler⁸⁰ varied Gesell's experiment by timing the interval after the object has been hidden. Babies one year old could remember the object after five minutes, babies two years old, after twenty minutes. Some two-year-old children are able to relate their recent experiences, such as a walk in the woods or a visit to grandma's. They also enjoy repeating bits of the favorite stories which they have frequently heard.

Certain acts have elements which involve memory and a simple associative learning that to adults resembles reasoning. Being taken up in his mother's arms in the position for nursing, or even hearing the sound of her voice as she announces feeding time is frequently sufficient to stop the

⁸⁰ Charlotte Buhler, *The First Year of Life*. Translated by Pearl Greenberg and Rowena Ripin. New York: John Day Company, 1930.

baby's cry of hunger and to initiate preliminary sucking movements. Being placed on the bath table is the signal for gurgles or howls depending on whether bathing has proved to be a pleasant or a painful experience. The sight of outdoor wraps is welcomed with glee because an outdoor excursion is sure to follow. The sleeping bag is avoided because it means bedtime. These responses are not true examples of reasoning, because no new adaptation is involved.

EMOTIONAL REACTIONS

Psychologists have usually limited the term *emotional* to "a stirred up state of the organism"—profound organic responses such as occur in fear and anger. They have, in general, excluded the milder affective states. There is some justification for including both kinds of responses in this discussion of emotional behavior. The intense type of emotional behavior is destructive, while the milder form is tonic and usually beneficial.

Emotional reactions are usually identified by some form of overt behavior, such as crying, kicking, cringing, or drawing away from the source of agitation. Recently, attempts have been made to study the internal responsiveness to frustration and startle stimuli by means of the galvanometer. The galvanic skin reflex is one of the most promising indicators of physiological activity in emotional states. Galvanic reactivity was noted by the fourth month, but it is much smaller in magnitude at that age than in later childhood. Jones³¹ interprets these results as indicating

the surface character of the reactions of young subjects to so-called emotional stimuli.

During the period of adjustment to this relatively uncomfortable world discontent or suffering predominates. Under good conditions of physical care and feeding the pleasant emotional tone gains ascendance. The first is characterized by tears, tension of muscles, and changes in respiration; the

³¹ Harold E. Jones, "The Galvanic Skin Reflex in Infancy," *Child Development*, I (June, 1930), 106-110.

second, by gurgling, release of tension, and normal muscular tonus.

Soon after birth both forms of emotional response are present in a somewhat undifferentiated form. Neither medical students, nurses, or students of psychology were able, without a knowledge of the situation in which the emotion was manifested, to identify from pictures the emotion expressed by newborn babies³²

More specific patterns of anger and fear appear, by the end of the second year, when a situation arises that cannot be dealt with by means of the response repertory available at the time. This feeling of inadequacy and thwarting is expressed early in two general forms of emotional behavior, a positive or aggressive form and a negative or withdrawing form which may be designated respectively as anger and fear.

From the beginning there is a tremendous amount that the baby must learn. As he grows older, there is an ever increasing number of things he wants to do. There are routine demands of his environment which he wishes to avoid. It is not surprising, therefore, that, during the second year when he has so much yet to learn that the frequency and complexity of emotional behavior increases, and constitutional weaknesses become apparent. Both Goodenough³³ and Blatz and Millichamp³⁴ found evident manifestations of emotional behavior during the second year of life. The expression of anger in a frustrated two-year-old is unmistakable.

The conditions evoking anger are numerous, but all involve the total situation and, to some extent, the abrupt thwarting of a desire or the interference with an ongoing activity. This response is not manifested so early in life as

³² Mandel Sherman, "The Differentiation of Emotional Responses in Infants II The Ability of Observers to Judge the Emotional Characteristics of the Crying of Infants, and of the Voice of an Adult," *The Journal of Comparative Psychology*, VII (October 1927), 335-351

³³ F. L. Goodenough, *Anger in Young Children* Minneapolis, Minn.: University of Minnesota Press, 1931

³⁴ W. E. Blatz and D. A. Millichamp, *The Development of Emotion in the Infant*. University of Toronto Studies in Child Development, Series No. 4, 1935

Watson reported it to be. In 358 experiments upon sixty-six infants Pratt, Nelson, and Sun³⁵ failed to get the definite "defense reactions" that Watson earlier designated as rage. During the second year, however, it is frequently evoked by such abrupt interference or stoppage of action as having property taken away, having the ears cleaned, and having to work at something that proves difficult. The intensity, duration, and especially the unexpectedness and suddenness of the stimuli seem to be of more importance in evoking an emotional response than the kind of stimulation. Anger is manifested in physical reactions, such as kicking, stamping, and aggressive movements or by frowns and pouting. The overt manifestations of anger change with age. Forms of verbal and retaliative behavior in later childhood tend to replace primitive and violent bodily responses of undirected energy. Development consists

in the substitution of more and more socially acceptable ways of removing an interfering nuisance and in the developing of a greater variety of approved interests and action patterns to supplant the activity thwarted.³⁶

Fear, too, has characteristic manifestations: first, crying, screaming, rigidity; then, reactions of a withdrawing nature—running away, holding aloof, or turning away from the fearful situation. It is usually aroused by something that has the element of suddenness and unexpectedness. A frog was found to be the most fear-arousing of the animals presented, probably because of its tendency to jump unexpectedly. Confidence counteracts fear. Loud noises, alleged to be a cause of fear,³⁷ may not evoke these responses when an adult in whom the child has confidence is present. On the other hand fear may be caught from older individuals. The mother duck communicates her fear to the brood who

³⁵ K. C. Pratt, A. K. Nelson, and K. H. Sun, *The Behavior of the New-born Infant*. Columbus, Ohio: Ohio State University Press, 1930.

³⁶ K. M. B. Bridges, "Emotional Development in Early Infancy," *Child Development*, III (December, 1932), 324-341.

³⁷ Millicent W. Shinn, *The Biography of a Baby*, p. 81. Boston: Houghton Mifflin Company, 1900.

imitate her in scurrying away from the terrifying object, quacking and flapping, with no idea of what is the matter. If a mother shows fear of lightning, the baby is apt to respond in the same way. Emotional responses are often acquired as the result of a single experience. They persist even in the absence of repetition of the provoking situation. Development in control consists of gradually increasing success in directing attention to something else or in substituting exclamations, laughter, or an active control of the situation for the previous ineffectual and inappropriate emotional responses.

Jealousy may be considered as a form of anger, aroused by a thwarted desire to enjoy an anticipated benefit which is unexpectedly bestowed on someone else. It is reported to occur more frequently among girls than among boys. Although the incidence of jealousy has been found by several investigators to be greatest about the third year, this feeling frequently occurs in the second year with the advent of a new baby. Thus Tiedemann reported that his two-year-old slapped his baby sister every time he got a chance. While jealousy appears to be almost inevitable, it can be lessened by wise treatment. The mother should show equal affection for both children and make the older one feel that he, too, is cherished. In addition, a positive liking for the new baby should be built up. Finally if the two-year-old has become accustomed to sleeping and playing alone and has learned to be content with his own occupations, he will not resent so keenly the attention which his mother must necessarily give to the new baby.

Many parents have been successful in making the older child feel that the baby was his — really an extension of his own personality. One little boy, not quite two years old, was very jealous for about two months. He had been seriously ill and was easily irritated when the necessary attention he had been given during his illness was gradually withdrawn. He frequently “took it out” on his older sister and on his baby sister. The parents used every opportunity to comment favorably when he was good to his sisters and made

him feel that he was clever to have such nice sisters and to bring them up with such good manners. The jealous phase passed and left in its place a casual solicitude for his sisters' manners. The manifestation of jealousy varies with the situation. It may take the form, as in the case cited, of a direct attack upon the rival or of negativism or obstinacy. Purposely to make a little child jealous or angry is a wicked thing to do. It is more truly "cruelty to children" than is neglect of their temporary physical comfort.

A number of factors determine whether or not a particular object or situation will arouse an emotional response. The first of these factors is the child's general level of maturity. It is possible that the tendency to fear or to become angry may change with the growing-up process itself. Closely related to the general level of maturity is the degree of intelligence and knowledge which the child possesses. At five months of age he does not know enough to be afraid of many things. At two years of age he knows enough to be afraid but not enough to control the situation. A second factor in a child's emotional responses is his physical condition. He is less able to resist both fear and anger when he is tired or ill. Constipation and lack of bladder control appear to be conditions associated with anger. Low vitality or pain may lower the thresholds of, accentuate, or prolong emotional responses. The third important factor is the tensions and relationships existing in the entire situation. The most fearful object may be faced with a person in whom the child has utter confidence. On the other hand, certain individuals in the family may have the unhappy faculty of precipitating any inert irritation which the child feels.

In view of the complicated causation of the more intense emotional behavior, wide individual differences are to be expected. Goodenough³⁸ observed great variation in the number of outbursts of anger among forty-five children seven months to eight years of age. One four-year-old girl had only four tantrums in 131 days while a baby boy one and a half years old had 109 outbursts in thirty days. These differ-

³⁸ F. L. Goodenough, *Anger in Young Children*, op cit

ences in emotional response constitute an important basis for individual variations in personality

A nucleus of personality can be identified in this early period. Characteristic patterns of response appear, persist, and pervade the baby's behavior. The emotional pattern established during the first two years is an extremely important factor in the individual's further development.

SOCIAL BEHAVIOR

A child's social relationships probably constitute the most important single factor in the development of his personality. During the first two years the infant makes considerable progress in extending his range of contacts with persons as well as with things. At birth the baby does not even identify the various parts of his body with himself. It is a notable day when he first realizes that his toes belong to him instead of to the world in general. He is doubtless perplexed during the first year by the fact that his shoes come off at night while his feet do not. He discovers himself as a cause when he repeatedly drops an object to the floor and hears the thud or when he experiments with various vocal noises. It is probable, however, that he learns to know others before he really understands himself as a self.

Before he can identify persons, he has learned to respond to them in many ways in order to satisfy his biological needs. He early learns to cry when he wants to be picked up, if crying has previously been successful in bringing his mother running. He learns not to cry if crying does not bring him what he wants. As early as the third week some babies begin to attend to human voices, whereas earlier other sounds were more likely to attract their attention. In the third to the fifth month he will turn his head in response to a voice. Shortly after the middle of the first year he discriminates strangers and before the end of the year is cordial to his mirror image, plays "Peek" and "Pat-a-cake" with obvious enjoyment, and shows a social interest both in adults and other children.

During his second year the baby establishes still more co-

operative relationships with adults and with other babies. A party for two-year-olds, however, is not likely to be a social success. Shirley ³⁹ observed that the fifteen babies forty-three weeks of age who attended the baby parties paid very little attention to each other. A few aggressively tried to acquire other babies' toys; a few cried; some smiled. It was hard to tell whether "a good time was had by all." They may have enjoyed themselves more alone. In the nursery school it has been observed that two-year-olds tend to play with materials almost exclusively rather than with other children

At this age companionship with other children has both advantages and disadvantages. The association with others stimulates language development, for the desire to make an impression on someone or to get him to do what you want is a strong motive for the mastery of speech. The presence of other children thus gives continual incentive to speech. Playing with other children also helps to lay the foundation of the distinction between mine and thine. By the end of the second year if the baby has sufficient toys of his own, he can be taught not to take other children's toys or older brothers' and sisters' belongings. However, if the restrictions are too tight and the necessary inhibitions too hard to set up, the gain in recognition of property rights may not be worth the feelings of resentment built up. In one family fragile objects are put out of reach of the youngest members of the household, and specially prized belongings are also protected by being kept in a special place. The other things are largely shared on an ownership-by-use basis.

Far more important than acquiring a strict sense of property rights is his learning to accept careless and teasing treatment as an inevitable part of life, to get along with children who show him no special consideration, and to accept the natural consequences of his interference with other children's activities or belongings. Direct action from

³⁹ Mary M. Shirley, *The First Two Years: A Study of Twenty-Five Babies*, Vol. II *Intellectual Development*. Minneapolis, Minn.: University of Minnesota Press, 1933

another child about the same age will teach the overaggressive one more than an adult can.

The two chief disadvantages of association with other children during the second year are the danger of overstimulation and the risk of infection. Some children become overfatigued in trying to keep up with more sturdy companions. Colds and other communicable diseases should be avoided, if possible, and strict isolation practiced in the case of children who have been exposed to or give any evidence of coming down with one of the numerous infections.

In many families the baby has more contacts with other children than he has with his father, and far more contacts with his mother. Many mothers act as though the father were nothing but "a biologic and economic necessity," and forget that the baby is his baby as well as theirs. To love and understand infants is not an exclusive feminine characteristic, as anthropological studies have shown. The father will understand his child better if he knows him at least a little when he is very young. Moreover, the baby should learn to like many adults so that he will know how to behave with them.

Accordingly, the father should have his duties and privileges in regard to the care of the baby during these first years. The duties should consist of more than paying the bills, and the privileges of more than telling his friends about the cunning things the baby does. Although some educational procedures should be jointly worked out by the father and mother, there need not be perfect agreement. Some variation in the emphasis parents put on different kinds of behavior and the kind of behavior they permit is desirable, provided that the child senses that these variations in treatment are caused by differences in the adults' personalities and that there is no friction between them. Suppose a father does play with a child after the mother has put her to bed. The slight loss in the total amount of sleep would be far less serious than a heartless authoritarian breaking in on a happy natural playtime.

Individual differences observed in the social behavior of

normal children are wide and vary with the age and temperament of each child as well as with the place in which the observation is made, the activity in which the group as a whole is engaged, and the quality of parent guidance. Although specific social behavior of an individual child cannot be predicted, progress in the direction of social acceptability may be expected, under wise guidance, during the first two years of life.

INTELLIGENT BEHAVIOR

An intelligent baby is one who can see what are for him difficult relationships and can quickly make numerous clever, useful adaptations to the problems that confront him. During the first year of life these abilities are manifested chiefly in motor and manipulative skills; during the second year, they are increasingly revealed in social responses, language, and comprehension of simple directions and problems presented to him. The child grows in the ability to learn.

A number of attempts have been made to measure intelligent behavior in babies. The Kuhlmann revision and extension of the Binet-Simon Scale⁴⁰ is one of the most widely used of the early tests of infant intelligence. The next most important advance was made by Gesell⁴¹ who recognized that various categories—motor, language, adaptive behavior, and personal-social behavior—have significance for mental growth in the young child. The following are other more recent, significant attempts to devise a mental scale for the first years of life:

1. *Minnesota Pre-School Scale*. Form H. Goodenough, F. L., Foster, J. C., and Van Wagenen, M. J. Educational Test Bureau, Minneapolis, Minn., 1932.

Standardized on 900 children, 18 months to 6 years

2. *Merrill Palmer Scale*. Stutsman, Rachel. *Mental Measurement of Preschool Children, with a Guide for the Administration of*

⁴⁰ F. Kuhlmann, *A Handbook of Mental Tests: A Further Revision and Extension of the Binet-Simon Scale*. Baltimore, Md. Warwick and York, 1922.

⁴¹ Arnold Gesell, *The Mental Growth of the Pre-School Child*. New York: The Macmillan Company, 1925.

the Merrill-Palmer Scale of Mental Tests. Yonkers-on-Hudson: World Book Co., 1931. Pp. x + 368.

Recommended for age range 24 to 63 months

3. *Developmental Tests for the First Six Years of Life* Buhler, Charlotte and Hetzer, Hildegard *Testing Children's Development from Birth to School Age.* Translated from the German 1932 edition by Henry Beaumont. New York: Farrar and Rinehart, 1935. Pp. 11-191.
4. *California First Year Mental Scale* Bayley, Nancy. *California First-Year Mental Scale* Berkeley, Cal.: University of California Press, 1933. Pp. 24
5. *Iowa Tests for Young Children.* Fillmore, Eva A. *Iowa Tests for Young Children.* Studies in Child Welfare, Vol. XI, No. 4. Iowa City: Iowa University, 1936. Pp. 9-58.
6. *The New Revision of the Stanford-Binet Scale* Terman, Lewis M., and Merrill, Maud A. *Measuring Intelligence: A Guide to the Administration of the New Revised Stanford-Binet Tests of Intelligence* Boston: Houghton Mifflin Company, 1937. Pp. xii + 461
7. *Linfert and Hierholzer's Scale for Measuring the Mental Development of Infants during the First Year of Life* Linfert, H. E., and Hierholzer, H. M. *A Scale for Measuring the Mental Development of Infants during the First Year of Life* Catholic University of America, Studies in Psychology and Psychiatry, Vol. 1, No. 4, 1928. Baltimore, Md.: The Williams and Wilkins Company, 1928. Pp. v + 33.

To these tests may be added three other sources of information on the pattern of development in infancy to which reference has already been made:

Arnold Gesell and Helen Thompson, *The Psychology of Early Growth*, including Norms of Infant Behavior and a Method of Genetic Analysis. New York: The Macmillan Company, 1938. Pp. ix + 290

Mary Cover Jones, "The Development of Early Behavior Patterns in Young Children," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXIII (December, 1926), 537-585.

Mary M. Shirley, *The First Two Years: A Study of Twenty-Five Babies.* Vol. I: *Postural and Locomotor Development* Vol. II: *Intellectual Development.* Minneapolis, Minn.: University of Minnesota Press, 1931; 1933. Pp. xv + 227; Pp. xvi + 513.

These tests of mental development include a large percentage of items which may be classified as tests of motor

co-ordination. Their significance in intellectual development is not clearly established. Gesell found the items on his scale predicted fairly well a baby's subsequent level of achievement. Other investigators, notably Bayley⁴² and Furfey and Muehlenbein,⁴³ found very slight predictive value in the tests given during the first year. The same children tested in their third year made widely different scores from those which they made earlier. One explanation of the inconstancy of these test results lies in the nature of the tests used. They do not have a high reliability. When the Bühler Infant Scale was repeated with the same children, their scores varied from -19 to +46 points.⁴⁴ The early tests consist chiefly of motor and manipulative items while the third-year tests require considerable language facility.

Inadequate as the tests for infants are, they are superior to the incidental, unstandardized judgments that are continually being passed on children. The impressionistic information, however, should not be disregarded. In any important decision, such as the placement of an infant in a foster home, other sources of information should be obtained to supplement the test results. A knowledge of the intelligence and achievement of the baby's parents and observation of his spontaneous behavior are additional aids in placing him in the kind of home in which he would probably be most happily adjusted.

INFLUENCE OF THE SURROUNDING CULTURE ON INDIVIDUAL DEVELOPMENT

Children in different cultures grow up to be different, not only because of differences in heredity and experience, but also because they have acquired from the surrounding cul-

⁴² Nancy Bayley, "Mental Growth during the First Three Years: A Developmental Study of Sixty-One Children by Repeated Tests," *Genetic Psychology Monographs*, XIV (1933), 1-92.

⁴³ P. H. Furfey and Josephine Muehlenbein, "The Validity of Infant Intelligence Tests," *The Pedagogical Seminary and Journal of Genetic Psychology*, XL (March, 1932), 219-223.

⁴⁴ Ruth M. Hubbard, "A Study of the Reliability and Validity of the Bühler Infant Scale," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVII (December, 1935), 361-384.

ture a certain pattern⁴⁵ so integral a part of them that it is often identified with their personality. The influence of the culture is seen most clearly in studies of primitive societies,⁴⁶ in some of which even so-called masculine and feminine traits are reversed, the women assuming leadership in business, in family life, even in courtship; the men playing a clinging-vine role. This influence of the culture in shaping the characteristics of individuals, without doubt, begins to operate early in life.

At conception the effect of the surrounding culture is negligible except as it has determined the persons who mate. In some cultures this is a very important influence.

Certain customs may affect prenatal development. In countries, for example, where custom demands that the expectant mother be confined in dark rooms and her diet limited in essential food substances, the growth of the fetus is seriously impaired. In less primitive societies economic conditions affect the health of both mother and child. A definite relationship has been reported between adequacy of diet and income.⁴⁷ The diet of the poorest group comprising four and one-half million people was found to be deficient in every dietary constituent examined. The next higher income group had a diet adequate in protein, fat, and carbohydrate, but deficient in all the vitamins and minerals considered. The third, or middle income group showed a dietary deficiency in several important vitamins and minerals. The fourth, or well-to-do group, had an almost adequate diet and the wealthiest group showed a surplus of all constituents examined. To make the diet of the poorer groups adequate would involve an increase of from 12 to 25 per cent in milk, eggs, butter, fruit, vegetables, and meat. The conditions under which underprivileged groups live are, moreover, associated with ignorance of the newer knowl-

⁴⁵ Ruth Benedict, *Patterns of Culture*. Boston: Houghton Mifflin Company, 1934.

⁴⁶ Margaret Mead, *Sex and Temperament in Three Primitive Societies*. New York: William Morrow and Company, 1935.

⁴⁷ John Boyd Orr, *Food, Health and Income*. London: The Macmillan Company, 1936.

edge of nutrition and with inadequate medical care of the expectant mother.

Many instances of the specific influence of custom on the physical make-up of children might be cited—the practice of flattening the head of Indian infants in certain tribes, the foot-binding of the Chinese, the deforming of lips and ears among certain African tribes. In less primitive cultures the adequacy of medical care in the community and the mother's knowledge of nutrition and infant care affect the psychological as well as the physical development of children. The child's physical care during the first few weeks, so largely determined by the social conditions into which he is born, may be an important determiner of his emotional development. The quality of the food and the ease of getting it, and protection from the communicable diseases of infancy may have a great deal to do with the individual's outlook on life.

During the early preschool period the effects of the surrounding culture become still more marked. The child learns the language of the surrounding culture. He not only learns the words but also acquires the emotional implications with which his social group has invested them. In the United States the word *Bolshevik* is a different stimulus to the child of a Socialist than it is to the child of a bank president. The rate of progress in acquiring speech likewise depends in part upon the social environment. Values, attitudes, expressive movements, all develop, in subtle ways, according to the culture pattern.

The influence of the culture on child development is indicated by differences in responses made by children in different environments to scales standardized on certain groups of American children. For example, the average performance of one-, two-, and three-year-old Negro children of Jamaica, B.W.I., on the Gesell schedules⁴⁸ was inferior to that of the New Haven children, but not consistently so. In

⁴⁸ M. W. Curti *et al*, "The Gesell Schedules Applied to One-, Two-, and Three-Year-Old Negro Children of Jamaica, B.W.I.," *The Journal of Comparative Psychology*, XX (October, 1935), 125-156.

age of creeping, standing, and walking the Negro children surpassed the Gesell norms. In a number of personal-social items they were markedly inferior, though they excelled in such activities as running errands.

INDIVIDUAL RECORD

Under good environmental conditions babies pass through important stages of motor, intellectual, and social development during their first two years of life. Parents should not, however, expect their babies to reach a certain stage at a definite time, for development takes place at different rates. If, however, a given ability appears markedly earlier than the age range for children in general, the parent should consider whether there is any evidence of strain or fatigue. If the ability seems to be markedly retarded in its appearance, the parent should study the child's physical and social environment to see whether experiences should be provided to stimulate the delayed behavior. It appears to be desirable for children to pass through the normal stages of development without skipping any completely. There is even some evidence accumulating to show that a stage omitted may be reverted to later on after the child has gained a degree of maturity which makes the earlier stage inappropriate.

An accurate long-continued study of development of individual children as here outlined may also have some value for research on the still unanswered question: "What is the effect of a given sequence on later development?"

Accordingly, the developmental stages which, under ordinary conditions, may be expected during the first two years are outlined in the following pages. For each item the central tendency in age derived from the normative summaries listed on pages 80-81 is given. *Reader should translate the single figure given into a range covering from two to four months.* For example, the average age of sitting alone is given as six months, but individuals in the middle 50 per cent of normal children may sit alone as early as the fifth month or as late as the seventh month, while the upper and lower quarters of the distribution show a still wider varia-

REPRESENTATIVE PERFORMANCE OF INFANTS FROM BIRTH TO TWO
YEARS OF AGE ⁴⁹

ACTIVITY	CENTRAL TENDENCY IN AGE OF APPEARANCE IN MAJORITY OF INFANTS	AGE WHEN YOUR CHILD ACQUIRED THE ABILITY*
Shows general activity, increasing before feeding time	At birth	.
Spreads and closes hands	" "	
Turns head when lying face down	A few hours after birth	
Kicks	A few hours after birth	
Turns over	Seven days on	
Holds chin up when lying face down	Three weeks	
Averting head from bright light	Five to six weeks	
Turns head to the side when lying face down	One month	
Lifts head intermittently, though unsteadily, when lying face down	" "	
Lifts head from time to time when held to the shoulder	" "	
Makes crawling movements when laid prone on flat surface	" "	
Follows moving person with the eyes	" "	
Hears sounds	" "	
Says Mai Nei and open vowels	" "	
Returns glance of adult with smiling	One to two months	
Makes defensive hand movement	" " " "	
Brings hands to mouth frequently	Two months	
Reaches for objects	" "	
Lifts the chest a short distance above the table surface when in the prone position	" "	
Holds head above horizontal plane	" "	
Holds head erect for a short time when held to the shoulder	" "	
Is quieted by touching	" "	
Listens to speaking voice	" "	
Smiles	" "	
Makes all vowel sounds	" "	
Makes such sounds, as <i>y, ch, r, p, b</i>	" "	
Holds head erect and steady when held to shoulder	Three months	
Pushes or elevates self by arms in prone position	" "	
Rotates body from dorsal to side position	" "	

* Shown by frequent response when the situation is presented

⁴⁹ Data obtained from sources listed on pages 80-81

REPRESENTATIVE PERFORMANCE OF INFANTS FROM BIRTH TO TWO
YEARS OF AGE (*continued*)

ACTIVITY	CENTRAL TENDENCY IN AGE OF APPEARANCE IN MAJORITY OF INFANTS	AGE WHEN YOUR CHILD ACQUIRED THE ABILITY
Reaches and grasps .	Three months	
Cries when adult leaves him	" "	
Recognizes mother and father	" "	
Shows distress, excitement, delight	" "	
Holds body erect when supported at lower back	Four months	
Nearly always lifts head when placed prone	" "	
Straightens knees when held erect	" "	
Brings object to mouth	" "	
Holds head steady when carried or swayed	" "	
Lifts head and shoulders in dorsal position as an effort toward sitting	" "	
Sits with resistant body posture when supported by pillows, with complete head control	" "	
Hands no longer predominantly clenched, but frequently open	" "	
Locates sound one foot away . .	" "	
Makes all consonant sounds .	" "	
Laughs aloud	" "	
Returns approaching glance with "lalling", shows displeasure when loses glance of adult . .	" "	
Holds bottle	Five months	
Picks up cube from table on contact	" "	
Rolls from back to stomach	" "	
Sits with slight prop	" "	
Is quieted by caress, disturbed by sight of people	" "	
Observes other child, smiles at other child .	" "	
Grasps a seen object such as a red ring	Six months	
Retains transient hold of two cubes, one in either hand	" "	
Grasps with simultaneous flexion of fingers . .	" "	
Plays with toes .	" "	
Holds out arms to be taken up	" "	
Sits momentarily without support, if placed in a favorable leaning posi- tion	" "	

88 AN INTRODUCTION TO CHILD STUDY

REPRESENTATIVE PERFORMANCE OF INFANTS FROM BIRTH TO TWO
YEARS OF AGE (*continued*)

ACTIVITY	CENTRAL TENDENCY IN AGE OF APPEARANCE IN MAJORITY OF INFANTS	AGE WHEN YOUR CHILD ACQUIRED THE ABILITY
Uses several syllables .	Six months	
Recognizes familiar people	" "	
Shows fear, disgust, anger, distress, excitement, delight	" "	
Grasps with simultaneous flexion of fingers	Seven months	
Rotates wrist freely in manipulation	" "	
Picks cube deftly and directly from table .	" "	
Sits alone one minute	" "	
Held erect, stands firmly with help	" "	
Picks up pellet with partial finger prehension .	Eight months	
Raises self to sitting position	" "	
Strives for attention by "lalling" and stretching out hands toward adults	" "	
Opposes thumb in seizing cube	Nine months	
Holds cup	" "	
Feeds self with hands	" "	
Tries to pull off clothes	" "	
Points with index finger	" "	
Examines hands if wet or sticky	" "	
Tries to put on clothes	" "	
Rubs body with soap or towel	" "	
Supported under arms, makes rhyth- mic stepping movements	" "	
Creeps when prone	" "	
Sits alone	" "	
Says da-da, ma-ma	" "	
Cries if other child receives attention, offers toy to other child, "lalls" to other child	" "	
Pulls plug out of bath	Ten months	
Creeps	" "	
Pulls self up to standing position .	" "	
Stands holding on to furniture .	" "	
Imitates movements of other child ..	" "	
Opposes toy being taken away ..	" "	
Pulls on the clothes of adults, offers adult an object, imitates adult's movement with a plaything	" "	
Puts aside toys to turn to another child	Eleven months	

REPRESENTATIVE PERFORMANCE OF INFANTS FROM BIRTH TO TWO
 YEARS OF AGE (*continued*)

ACTIVITY	CENTRAL TENDENCY IN AGE OF APPEARANCE IN MAJORITY OF INFANTS	AGE WHEN YOUR CHILD ACQUIRED THE ABILITY
Strives for attention of other child (beginning of organized play activity)	Eleven months	
Taps a small bell	Twelve months	
Holds crayon adaptively to make a stroke	" "	
Removes paper cap from head	" "	
Obtains a toy by taking a second step	" "	
Stands, supporting self	" "	
Lowers self from standing to sitting position	" "	
Crawls out of a hole in a board elevated 5 inches	" "	
Walks with help	" "	
Stands alone . . .	Fourteen and fifteen months	
Steps when held erect . . .	" " "	
Walks alone . . .	" " "	
Speaks first word in presence of examiner . . .	" " "	
Shows anger by temper tantrum	" " "	
Throws ball into box . . .	Eighteen months	
Rolls a bowling ball 8 feet	" "	
Scribbles spontaneously and vigorously	" "	
Gets off inverted box six inches high or stool 19 inches high on which he has been sitting	" "	
Climbs three steps	" "	
Climbs over large obstacle	" "	
Climbs upon low box . . .	" "	
Differentiates between stroking and circular scribble . . .	Twenty-one months	
Throws ball . . .	" "	
Builds straight tower . . .	" "	
Places 13 of 16 cubes in box	" "	
Crosses feet . . .	" "	
Walks attended on the street . . .	" "	
Walks backward . . .	Twenty-two months	
Obeys simple commands . . .	" "	
Stands on one foot . . .	Twenty-three months	
Speaks first pronoun phrase, and sentence in presence of examiner . . .	" "	

REPRESENTATIVE PERFORMANCE OF INFANTS FROM BIRTH TO TWO
YEARS OF AGE (*continued*)

ACTIVITY	CENTRAL TENDENCY IN AGE OF APPEARANCE IN MAJORITY OF INFANTS	AGE WHEN YOUR CHILD ACQUIRED THE ABILITY
Repeats two out of three words spoken by examiner	Twenty-three months	
Piles tower of six blocks with good co-ordination	Twenty-four months	
Imitates vertical or horizontal strokes	" "	
Throws bean bag into a twelve inch hole after practice	" "	
Rolls a rubber ball half way up an incline, 3 feet, 8 inches long	" "	
Climbs upon chair, height $17\frac{1}{2}$ inches	" "	
Gets off chair 13 inches high	" "	
Runs	" "	
Names parts of face	" "	
Counts 1 without object	" "	
Repeats three digits	" "	
Recognizes self in mirror	" "	

tion. In the third column the parent may record the age at which an individual child reached each stage. Such a record may have four possible values: (1) to direct parents' attention to the child's development, (2) to avoid premature development or omitted stages in development due to over-stimulation, (3) to provide necessary stimulation in cases of retarded development, and (4) to study the effect of particular sequences on later development.

Obviously, the developmental pictures will vary with environmental conditions as well as with hereditary tendencies of individual children. If records of this kind are systematically and accurately kept in precisely described situations, some light may be thrown on the relationship between sequences of development and other factors. Still more important is the pattern of behavior that is developed month by month under given environmental conditions.

Parents will be fascinated by a careful study of their baby's vocabulary as it grows word by word. A word may be considered a part of the child's vocabulary when it is used correctly in daily conversations; when it is named in reply to a

question such as "What is this?"; when it is used spontaneously by the child in response to objects or events or in his own interminable monologues. The following form of record is simple and convenient:

DATE	WORD	WHAT THE WORD WAS INTENDED TO MEAN
Dec 1	<i>drink</i> <i>shoe</i>	I want a drink Name of the object
Dec 3	<i>up</i> <i>dada</i>	I want to get up on your lap Father
Dec 4	<i>shoe</i> <i>dog</i> <i>down</i>	Forgotten when tested Name of the animal I want to walk

QUESTIONS AND PROBLEMS

1. Give illustrations from your experience of children who were decidedly advanced or retarded in any phase of their development. What factors seemed to be responsible for the acceleration or for the retardation?

2. Keep a record of the progress made by one child in walking. Did he have to be taught to walk? If so, how was this done?

3. What is the broad general sequence in motor development?

4. What do the majority of babies learn to do with their hands during the first year?

5. How does preference for one hand develop and what is its significance in child development?

6. What effect does special training have upon the development of different motor abilities?

7. Keep a record of the progress made by one child in talking

8. Mention in order the steps usually taken in acquiring speech

9. At about what age do most children begin to say real words?

10. Should a mother be disturbed if her child does not say a single word at the end of his first year?

11. Describe the kind of social environment which is most likely to help the child acquire a rich and varied vocabulary

12. Observe manifestations of anger, fear, and pleasure in infants, noting all the factors in the situation. How are these emotions manifested and evoked? Why is it difficult to identify specific emotional behavior?

13. What are the effects of a mild emotion? of a strong emotion?

14. What is the usual course of development of emotional behavior during the first two years of life?

15 Observe the reactions of infants of different ages to you as a stranger. Note individual differences in babies of the same age in social situations.

16 What kinds of simple commands can one-year-old babies be taught to obey? Two-year-old babies?

17 Describe one baby's responses to (a) members of his own family, (b) strangers. If there is a noticeable difference or similarity, how do you account for it?

18 What kinds of behavior make you think a child is intelligent?

19 What advantages does an intelligence test have over casual observation? What disadvantages?

20 Give examples of ways in which a given culture has influenced the development of young children.

21 Is there any evidence that the personality development of babies may be affected by a severe illness during the first year?

CHAPTER VI

HOW THE BABY LEARNS

The baby grows and learns. In fact, his growth in size and strength; the better functioning of his heart, lungs, digestive system, and glands, and the growth of his brain make the learning of increasingly difficult tasks possible. There is an increase in learning ability with age — a maturation in learning capacity as the nervous system develops. Moreover, learning in the present is dependent upon past accomplishment. One cannot learn complex mental tasks until he has acquired the prerequisite basis of experience. For example, the enrichment of vocabulary is dependent upon the mastery of simple language processes and first-hand experience with things and people. Thus, learning and maturation are mutually inclusive. Development is the result of these two overlapping processes under specific conditions.

Learning and Maturation. — Learning may be defined as the process by which a child is able to do something that he could not do before and which cannot be accounted for by maturation alone. Stoddard and Wellman¹ have defined maturation as

the expected growth and development of an organism under nutritive and stimulatory conditions within the normal range.

With good nutrition and a reasonably stimulating environment a baby may be expected to sit up and to walk without especial training. In these fundamental motor abilities maturation plays the leading role. Instruction and practice improve this initial motor control. The acquisition of specific language forms is more clearly a learned activity. Without some instruction the child could not acquire the lan-

¹ George D. Stoddard and Beth L. Wellman, *Child Psychology*, p. 187. New York: The Macmillan Company, 1934

guage of his country. Nature is seldom all-sufficient. In the most fully functioning behavior patterns there is an element of learning

Learning may occur before birth,² if unusual stimulatory conditions are present. A fetus which responded to a loud sound learned not to respond. It became habituated to the sound when the stimulus was repeated a number of times. Another fetus appeared to respond to a certain type of mechanical vibration after, but not before the vibration and a sound had been presented together a number of times.

At birth the baby is equipped with the minimum essentials of living. He does not have to learn to breathe, to make his heart beat, to digest food, or to make random movements. With no instruction whatsoever the majority of babies grasp a rod, make sucking responses, and contract their pupils in response to light. Yet none of these acts, commonly called reflexes or "unlearned responses" occur in an entirely mechanical and uniform way. Infants show individual differences in these responses depending upon their own physical functioning and environmental conditions.

Postnatal environment, of course, still more rapidly modifies behavior. All through life the present status of an individual grows out of his past learning.

A short period of training at a later stage of maturation has proved more effective in learning certain motor skills than a longer period of training at an earlier stage of development. In other words, training which was begun with a maturity advantage was more effective than earlier training and the patterns of response were more mature.³ In the case of any activity there is a readiness for learning, varying, to be sure, with individual children, that should be recognized if the most efficient learning is to be secured.

Rapidity of Learning in the First Years.—Learning in the first two years of life is exceedingly rapid, partly because

² Fowler D. Brooks and Lawrance F. Shaffer, *Child Psychology*, pp. 50-51. Boston: Houghton Mifflin Company, 1937.

³ Arnold Gesell, "Maturation and the Patterning of Behavior," in *Handbook of Child Psychology* (second edition revised), p. 228, Carl Murchison (Editor), Worcester, Mass.: Clark University Press, 1933.

the need for knowledge and skill is so great. The child's biological needs continually exceed his ability to satisfy them, his reach exceeds his grasp. Under such intense natural motivation the most effective learning may be expected.

Conditions of Effective Learning. — Some children learn more rapidly than others. This difference in rate of learning can be accounted for by structural and environmental factors. The quality and form of the neural structures are the primary determinant of the level of a child's ability to learn. Some children are inherently more educable than others.

The stimuli to action which arise in the environment likewise play a part in learning, especially in learning of the more complex type. Some environments are stimulating beyond the normal range; and accordingly encourage learning. For that reason guidance of infants and small children consists chiefly in studying their previous development, appraising it, and making their environment more conducive to effective, socially useful learning. Guidance likewise consists in showing them, or better still, helping them to discover for themselves, the most appropriate responses to particular situations.

Helping a child make a more effective response in a given situation is training in its best sense. Parents should recognize more fully the importance of both patience and teaching. They cannot expect children to learn the ways of this world quickly and without instruction. During the first two years instruction consists chiefly of showing the child better ways of meeting difficulties and satisfactory substitutes for fear, rage, and jealousy. As Stoddard and Wellman⁴ pointed out, *training* differs from *practice* in being "analytical, selective, and purposive." *Practice* which is mere repetition provides the least effective condition for learning.

Through an extensive series of laboratory experiments

⁴George D. Stoddard and Beth L. Wellman, *Child Psychology*, p. 191. New York: The Macmillan Company, 1934.

Thorndike ⁵ has described the following degrees of effectiveness of learning.

1. Mere repetition of the situation — no effect, necessarily.
2. Repetition of a situation with its appropriate response — some effect.
3. Repetition of a meaningful situation and response — effective learning increasing with the degree of meaningfulness.
4. A meaningful situation and response plus desire to learn — still more effective learning.
5. A meaningful situation and response plus desire, plus satisfaction in the process or outcome — the most effective conditions for learning

These general principles of learning will be made more concrete by application to specific learning situations in the lives of infants two years of age or younger.

LEARNING MOTOR CONTROL

Learning to Walk — The infant's urge to walk is strong. In all kinds of environments babies learn to walk, following, in general, the sequence of stages already described. Even in countries where the baby's movements are hampered by custom, children make progress as soon as they have the necessary freedom in the use of their bodies. In the development of the ability to walk maturation plays a most important role.

Environmental factors likewise enter in. The process of learning to walk has many ups and downs, due in part to circumstances. For example, one twelve-month-old baby was making steady progress in learning to walk without help. One day he slipped on a small rug and fell on the slippery hardwood floor, hitting his head. This one painful experience markedly delayed his progress in learning to walk. The fall resulted in an unwillingness to continue his attempt to walk. As long as walking resulted in satisfaction, progress was made. When it resulted in greater pain than pleasure,

⁵ Edward L. Thorndike, *The Fundamentals of Learning*. New York Teachers College, Columbia University, 1932

progress was interrupted. Other children, however, may not show so great a delay due to a painful experience.

What can the mother or nurse do to help the baby learn to sit, stand, and walk? At least two things are essential — food and freedom. Adequate food is needed to build muscle and bone. Freedom is needed for developing and learning to control the muscles. A clean sheet spread on the floor where there are no drafts is a safe place for the baby, unhampered by clothing, to turn and kick and squirm freely. A little pen by which the child can pull himself up to standing position is helpful about the sixth or seventh month. Again the *laissez-faire* policy modified by the adult's interest in the child's progress is best — do not interfere with his own efforts or force him to walk before he is ready. There is some danger of strain from too early, forced attempts to sit up and to walk.

All babies tumble in learning muscular control. The stage should be set, however, so that they will tumble in a relatively soft place. To prevent serious injury from falls, the baby should never be left alone except in a crib with raised sides, in a baby pen, or some other place from which he cannot fall. Four-months-old Jean fell from the bed one day. Her mother thought the baby was safe on the bed because she had not yet learned to creep or crawl. But while her mother was out of the room, Jean had managed to wriggle herself to the edge of the bed and tumble over. When the baby is learning to creep, a good way of substituting a desirable response for the undesirable one of tumbling off the bed is to teach him how to slide down the side of the bed until his feet touch the floor and to drop to creeping position. Sliding down stairs in the same careful way step by step should also be taught before serious accidents have a chance to occur.

Freedom and a safe place in which to run and climb are essential. Two-year-olds are "into everything." The problem is threefold. to provide plenty of things they can "be into" without harming themselves or making trouble for others; to remove, as far as possible, from the house and

surroundings anything that might harm the baby, and definitely to teach the child what to do in situations which might prove dangerous or annoying if he does the wrong thing

Outdoor Play Materials. — The child who has fields and paths to wander about in, little hills and steps to climb, pet animals and other children to play with, flowers, birds, trees, and farm animals to look at, and feel, and listen to, has valuable material for his development. In the open country there are many objects the child can manipulate — stones, pebbles, branches of trees, logs, chips, small sticks, milkweed pods, dandelions, and daisies. These are lacking on the neat, well-groomed lawn of a suburban house. In the backyard may be provided boxes of all sizes — some as big as apple boxes to crawl into and around, others smaller to pile up into structures of various shapes. Cans free from sharp ragged edges may be made into wagons by punching a hole in one end through which is put a strong piece of string. An old bell or pebbles placed inside a can furnish the noise so satisfying to two-year-olds. Some place can usually be found in which to hang a low, strong swing. Wagons, trains, fire-engines, autos, wheelbarrows, kiddie cars, and other toys to pull or push or move about in are popular at this age. A plank raised at one or both ends teaches balancing and gives a sense of adventure. A box of beach sand, and a small plot of ground dug up so that plenty of loose dirt may be used in making mud pies furnishes primitive, but still popular, manipulative material. What difference does it make if one corner of the yard does look disheveled? The baby can be taught to keep the rest of the yard tidy, and his own corner in as good order as possible. The same play materials may be used on the well-fenced-in roof of an apartment house. There are many flat city roofs which are going to waste so far as the children are concerned. These are ideal, convenient city play spaces — sunny, free from some of the noise, dust, and dangers of the streets. One apartment house has organized its own roof nursery school where the preschool youngsters play together under the direction

of one or two mothers who take turns supervising. The boxes, sand table, and other apparatus were bought co-operatively. There is a little house where the individual children's toys are kept, so that wagons, balls, pails, and the like do not have to be carried up and down each day. Putting one's toys away each day in one's own locker, and respecting the possessions of the other children are good habits to acquire. The very smallest child who has just learned to walk puts away at least one toy each day before he goes down. The mothers in charge seldom have to say "don't" or to interfere with the children's activities because there is practically nothing on the roof that the children should not play with. Squabbles over each other's toys are the most frequent cause of adult intervention, and out of these grows the consciousness of property rights and the need of taking turns.

It is the freedom to explore and learn that is important, not the place *per se*. This freedom may be secured in cities and villages as well as in the open country.

Indoor Play Materials. — Indoors, the two-year-old enjoys small household implements — a little broom, washtub, iron, and hammer. Doll's furniture is interesting play material at this age. The child's nursery, or his own corner of a larger room, should contain low cupboards and shelves in which he puts away his toys, picture books, crayons, pencils, paper, blocks, and other belongings. The low table and chair should be of just the right size so that when he sits at the table his elbows are at the level of the table and his feet flat on the floor. A blackboard is a stimulus to drawing and writing. Scrapbooks may be made by cutting pictures from magazines and pasting them in old blank books or in books made of wrapping paper sewed together. He may use scissors with blunt ends to cut out the pictures in blocks rather than in exact outline. The irregular blocks left by the carpenter are often more fun to play with than expensive blocks. At this age toys should be as large as the child can manage. They should be things that the child can make a noise with, build with, cause to move, ride on, or manipu-

late in some way. Such objects in his environment encourage the normal development of motor ability.

The Elimination of "Don't" — To remove as far as possible the things in the environment that call forth "don'ts" is a negative way of providing for positive learning. If the mother will for several days write down the reason for every "don't," she will have a list which will be interesting to study. She will discover the number of "don'ts" caused by objects in the room or grounds which might just as well be removed from the baby's sight or reach. Heavy urns, bowls, books, bric-a-brac, loose pins and buttons, knives, and forks are objects which may be removed from the baby's environment until he has learned to use them properly. She will discover the number of "don'ts" caused by the baby's being placed in a position in which he may hurt himself. A stairway without a gate, an open window which he can reach, machines which are running, scalding water, a chair so placed that he may tip over backwards — these dangerous situations may be largely eliminated by forethought.

The following is a list of "don'ts" which one mother said to her nineteen-months-old baby during *one day*:

"Don't throw dollie out of the bed." (One morning the baby threw her doll and hit her mother on the side of her head.)

"Don't put powder can top in the water." (The powder can top was given her to play with during her bath.)

"Don't pull washcloth away from mother." (She thinks that is a good joke and laughs when mother tries to get it away from her.)

"Don't upset the water."

"Don't pull bureau cover off"

"Don't pull high chair over on you"

"Don't touch spoons, knives, and forks." (She likes to go around "unsettling" the table.)

"Don't slap spoon with food in it" (She likes to push the spoon and spill its contents as she is being fed.)

"Don't put spoon in sister's plate." (She likes to take a sly dip out of someone else's plate.)

"Don't kick the table." (By kicking against the table she can push her high chair over backwards.)

"Don't stand up in the high chair."

"Don't pull high chair apart."

"Don't put the pin in your mouth."

"Don't touch the bread."

"Don't break any more wall" (The baby tries to break off bits of plaster from a crack in the wall)

"Don't put the plaster in your mouth."

"Don't scratch chair with the plaster."

"Don't break the cup"

"Don't pull the flowers up."

"Don't walk in the mud."

"Don't climb on the cellar door."

"Don't shake your high chair."

"Don't reach for the corncobs."

"Don't reach for dish." (When on mother's lap.)

"Don't put safety pin in your mouth."

Many objects in the environment are not removable. Bureau drawers must be used by adults. Bookcases cannot be emptied so that baby will not get hold of their contents. Matches are difficult to put out of the climbing baby's reach. Autos and trolleys run on streets where two-year-olds live. To most of these situations the baby can be taught to respond in a satisfactory way. If he wants to pull everything out of his mother's bureau drawers, he can be given a drawer or basket full of scraps of material and various objects, and told, "This is baby's. He can take everything out of this. This (the bureau drawer) is mother's. Baby must not open this." If he wants to tear up the morning newspaper, he may be given an old paper with the comment, "Here is an old paper you can tear." If he is noisy while his grandfather is taking a nap, he should be told to run on tiptoe and speak in a low voice. Later, when there is no occasion to be quiet, he should be told, "Grandpa isn't sleeping now. You may run and shout if you wish." In order to avoid harm from autos and other sources of danger the child must learn that a command given in a certain tone of voice must be obeyed instantly. There are a few situations where immediate obedience is imperative.

Learning to Pick up Objects.— The random movements the newborn makes are the capital he has to invest in new combinations of skills. At first the baby's hands will fumble with the small rubber toy or other objects which he encounters; finally, they will succeed in grasping it in an awkward manner. He should be allowed to "try, try, again" without interruption and without much help from adults. Left alone to solve the not insurmountable difficulties he meets in picking up objects, he will develop a commendable independence in these simple situations. Overcoming difficulties gives even a young child a satisfying feeling of mastery. Occasionally he may be shown a more convenient way of grasping than the one he learns by chance. Although there is a central developmental trend in the perfection of thumb opposition, the infant does not adopt any single method to the exclusion of other methods ⁶

When he is in the fumbling stage, the mother can provide many objects small enough to be grasped easily and large enough not to be swallowed. When the baby has learned to grasp objects and needs practice in looking for and recognizing things, she should provide only a few objects at a time.

At about six months of age the tendency to put things in his mouth is very strong. Shortly after that time the hands should find other interesting things to do and the hand-mouth pathway slowly fade out. If the baby is left alone too much of the time with nothing to look at or to play with, he may amuse himself by sucking his thumb. Bright-colored balls and birds hanging a few feet away from him will occupy his attention. (See Appendix III.) Rattles, strong celluloid and rubber rings and animals, unbreakable dolls, blocks, untearable picture books, nests of hollow blocks, spools, buttons and beads on strings that will not break, small lids and covers, and aluminum spoons and cups are all suitable toys for the first year. The most popular play materials for two-

⁶ Arnold Gesell and H. M. Halverson, "The Development of Thumb Opposition in the Human Infant," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVIII (June, 1936), 339-361.

year-olds are dolls and their equipment, clay, painting, blocks and wagons

Learning to Look. — The toys suggested encourage the development of meaningful vision as well as hand co-ordination. Accordingly, the baby should be given many kinds of objects which he can look at and handle. He should be allowed to look at things as long as he likes without interruption. A change of surroundings as from room to room, or from indoors to the street or garden increases his interest in learning to look and see.

Learning to Feed Himself. — If the child sees the rest of the family eating with spoons, he may want a spoon, too. At this age babies get great joy from doing things for themselves. Some time, between the eighth and the tenth months, the baby will usually show an inclination for a spoon. When this readiness occurs, he should be given opportunity to learn to use one. Of course, teaching him to feed himself is at first more trouble than feeding him; but if the mother continues to help him, he may lose his eagerness to learn. The spoon should be of medium size. A piece of oilcloth on the table and under the baby's chair, and even a bib made of the same material, will prevent worry and impatience when the baby spills a good deal at first, as he is sure to do. A bowl with deep sides is easier to fill the spoon from than a shallow plate. The chair should be low enough so the child may rest his feet flat on the floor, or on some firm support. Books, or a box of the right height may be used as a footstool. The child must not be expected to feed himself during the entire meal at first. When he tires, the mother may help with the last few spoonfuls. Placing the spoon in the correct position, guiding the hand to the mouth a few times, showing delight when a cargo arrives in port intact, encouraging him to "do it just like sister," brother, or father, and never showing impatience or annoyance at his efforts are some of the ways in which the parent or nurse can facilitate the learning of this skill. By three years of age he will probably be ready to use a small fork and by six or seven years, a knife. At

about three years of age the Dionne quintuplets could drink from cups and use spoons fairly well. In fact, they could feed themselves quite capably, but not in a manner that would be approved by Emily Post.

Learning to Dress Himself — Practice makes perfect if the best method is used every time and success is made pleasant. During the second year the baby should have plenty of practice in learning to dress himself as soon as he shows readiness for learning the different processes. The processes of dressing that seem easiest for him should be taught first, one by one. Taking off his clothes is easier than putting them on. Putting his arms and legs through the proper openings is one of the first steps in learning to dress himself. Between one and a half and two years, he may learn to cap one foot with a stocking; a half-year later, to start the stocking over the foot, get it upon the foot, and pull it up correctly. These and other steps in the process of learning to dress have been carefully analyzed.⁷ Attention may be called to armholes by games or songs, such as "First one hand and then another," "Peek-a-boo, peek-a-boo, Richard's hand is coming through," or "Bobbie's hand goes in, Bobbie's hand comes out."⁸

Buttoning is one of the most difficult processes. In the Stutsman Performance Test a strip of material with buttons sewed on it and another strip with corresponding buttonholes is given to the child. None of the eighteen-months-old children could button all the buttons, and most of the two-year-old children left the test incomplete. When the baby succeeds in his fumbling with button and buttonhole, smiles and encouragement should be given. Babies' clothes should fasten in the front with a few large buttons

A study⁹ of thirty children ranging in age from one year

⁷ C. B. Key, *et al.*, "Process of Learning to Dress among Nursery School Children," *Genetic Psychology Monographs*, XVIII, No. 2 (1936), 67-163.

⁸ Harriet M. Johnson and Maude Stewart, *A Nursery School Experiment*, p. 33. Bulletin of the Bureau of Educational Experiments, No. 11 (revised) 144 West 13th Street, New York Bureau of Educational Experiments, 1924

⁹ Lovisa Wagoner and Edna M. Armstrong, "The Motor Control of Children as Involved in the Dressing Process," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXV (March, 1928), 84-97.

eleven months to five years two months in the Iowa State College Nursery School showed that

children who manipulate buttons easily also score high on the Merrill-Palmer Performance Tests, and the Goodenough Drawing Test and the Nest of Cubes

The four children under two and a half years seemed to have little skill, and consequently little interest, in buttoning the jackets. "Children three years and over were interested and eager to button." This experiment suggests to parents that, at about two to three years, they may expect their children to begin to button some of their own clothing part of the time. Unbuttoning is easier than buttoning and buttons in front are easier to manage than buttons on the side. Buttons in the back were too difficult for almost all young children. Outdoor clothing—leggings, winter coats, and the like—are more difficult for children to put on than underwear and dresses.

The teaching of skills frequently has far-reaching effects even in the first two years. Having acquired skills along one line may change the child's attitude toward other things. One three-year-old became restless and a little defiant—a noticeable change from his former co-operative self. The family paid little attention directly to his changed behavior, but reduced all possible demands and taught him some little tricks that helped him to dress himself more quickly. Just getting sufficient control over the technics of dressing so that he could care for himself seemed to be an important factor in overcoming his lapse into irritability. He had been almost to the point of being able to dress himself but needed help at many places. With a little patient training he learned to spread his clothes out in order and to complete whole stages in the process for himself. He still asks for help but it is he who is now in command of the situation instead of the adult. He is proud of the shift in responsibility and says, "I am a big boy. I am almost a grown-up child. See, I can dress myself." He shows a satisfaction that extends beyond the dressing time and process. Even during the first

two years the conquest of skills is an aid to independence and to personality development.

LEARNING THE LANGUAGE

The significant achievement of acquiring spoken language results chiefly from a baby's feeling of need, from his natural impulses to use the vocal apparatus, and from the effects that his early attempts at vocalization produce. A pattern of associations is built — feeling of discomfort, crying, mother coming, relief of discomfort. Thus, the baby learns to complete the pattern by making the appropriate cry.

There comes a time when the baby chances to make a new sound, just as he chanced to grasp an object and to enjoy the ensuing sensation. He tries to repeat the enjoyable sound and, if successful, babbles that sound interminably. Every baby at first has a language of his own, sometimes so patterned in inflection and intonation that it sounds like a foreign language. This "baby talk" makes a contribution to the learning of real words, but if parents learn it, they deprive the baby of a strong motive for learning adults' words, since he can get what he wants by using his own language. If the more primitive form of language gestures will secure the things he desires, there is no urge to acquire the more difficult form of communication, speech. Something that is greatly desired is worth making an effort to name, if naming is necessary to secure it.

Interesting sights and sounds also provide stimuli to speech. Outdoor trips furnish new experiences that encourage recounting. Looking out on a busy street stimulates conversation about its sights and sounds. Animals furnish interesting, easily imitated sounds.

Picture books help the baby to enlarge and interpret his experience, and so aid language development, especially if the objects are named as the child looks at each picture. Picture books of familiar objects, such as the common domestic animals are better for the little child than pictures of unfamiliar wild animals.

The adults' manner of speaking to the baby is also a factor

in his speech development. The child's auditory patterns must be made very distinct. Speaking clearly and slowly and directly to a child whose attention is fixed on the speaker helps him to hear and comprehend the meaning and to reproduce the sounds of the words more accurately. Taking pains to repeat again and again words that resemble the sounds the baby is already making help him to acquire adult speech. Correct pronunciation is important in the early years.

The child carries through life not only the language of the group in which he is reared, but also, to a certain extent, the language of the individual who cares for him most constantly through the first years of life. If this person is his mother, he is likely to have the accent of his mother. If it is someone else, then her dialectic sounds will color it ¹⁰

From the babble period language may develop in a number of directions, depending upon the way persons respond to the child's first attempts at speech. Babble sounds may develop into "baby talk," careless, inaccurate speech, or cultured speech, depending upon the baby's environment.

A child's vocabulary will have greater vitality if he knows the meanings of words before he attempts to say them. He should know what a dog looks like, feels like, sounds like, and does, before he learns to say the word *dog*. Accordingly, the best words for the child to learn first are those which he needs in his everyday experiences and in his familiar environment—such words as milk, bread, table, chair, coat, hat, shoe, water, and drink. While the baby is being dressed, the mother can name rhythmically the various articles of clothing as they are put on. Mrs. Lucy Sprague Mitchell ¹¹ has shown the poetic possibilities of such rhythmic enumeration.

Taking time to talk with the baby, to name and explain objects, to tell him stories about himself and his activities—

¹⁰ Smiley Blanton and Margaret Gray Blanton, *Child Guidance*, p. 98 New York: Century Company, 1927. Quoted by permission of the publisher.

¹¹ Lucy Sprague Mitchell, *Here and Now Story Book, Two-to-Seven-Year-Olds*. New York: E. P. Dutton and Company, 1921.

his eating, dressing, outdoor excursions, his toys, and other aspects of home life — are ways of increasing his vocabulary during the second year. The mother, in turn, should not be too busy to listen to the child's chatter. His verbalization of ideas should be encouraged as an essential part of his development. Giving him something he wants when he asks for it correctly and not when he indicates his need by gestures, paying attention only when he addresses the person properly, answering his questions patiently and in terms he can understand, furnish motives for learning to use phrases and sentences. It is best for children to learn the words in natural situations which demand their use. The mother may use the word "plate" many times in everyday table conversation, and when the child points at or reaches for a plate the mother may ask, "What do you want?" If the child does not yet know the word, the mother may say, "Do you want a plate? Billy wants a plate. Give Billy a plate." Words must be heard hundreds of times before they are reproduced correctly, and their meaning is clearly understood. It is probably unwise to make a lesson of language study by asking the child to "say robin," "say plate." This forced vocabulary drill sometimes results in a negative attitude toward learning new words. It was found that some children who could not talk well had been given too much supervision, while others had received too little instruction in acquiring new words.

BUILDING EFFECTIVE EMOTIONAL PATTERNS

Emotional behavior is too important for all future learning to be neglected. It controls, to a large extent, what is chosen to be learned, as well as the effectiveness of the learning process. In moderation each emotion has constructive elements. Therefore the aim in the education of the emotions should be their desirable modification, not their elimination.

At no time of life can emotional behavior be more readily modified than in the early years when it is relatively unfixed

and unpatterned. Emotional behavior becomes built into the child's personality by much the same process as his other behavior.

Learning Not to Be Afraid. — How does it happen that babies who at first seem to have few fears develop into children and adults who are afraid of many different things — animals, strangers, snakes, ghosts, and situations that to others have no terrifying character? Watson's ¹² well-known laboratory experiment with the nine-month-old Albert showed strikingly the way in which new fears might be acquired through the process of conditioning. At first the baby made friendly approaches toward the white rat, but after the rat appeared several times simultaneously with a loud sound, the child began to cry, withdraw, and otherwise show the response of fear to the animal alone. This emotional response to the rat "spread" and Albert became "conditioned" to fear other furry objects also. This is one way in which fears are built.

Through the same process of re-conditioning the opposite kind of emotional response may be built up ¹³ A rabbit which initially aroused withdrawing reactions in another child, Peter, eventually evoked approach responses through association with pleasant things. The pleasant stimulus was always stronger than the negative one and the positive response accordingly prevailed.

All children do not respond to conditioning in exactly the same way that Albert and Peter did. Repetition of the experiment did not show the same results. This is because the total situation is not always the same. The object may not have the same meaning to all children. Their bodily condition will vary. They have different degrees of security and anxiety, and bring to the experimental situation different previous modes of response and knowledge.

Emotional fear patterns are not built only by the process

¹² John B. Watson and R. Rayner, "Conditioned Emotional Reactions," *The Journal of Experimental Psychology*, III (February, 1920), 1-14.

¹³ Mary Cover Jones, "A Laboratory Study of Fear The Case of Peter," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXI (September, 1924), 308-315.

of association with previously acquired fears. There is evidence of fear reactions which appear not to have been learned through being specifically related to other emotional experiences, but to have developed as the child grows older. Thus, fear of strangers in a certain environment tended to appear about the fifth month and fear of the dark shortly after two years of age.

What can the parent or nurse do to prevent unnecessary fear? In addition to the method of re-conditioning already mentioned, the commonly used methods have been disuse, distraction, verbal appeal, social imitation, and the repetition of the feared situation in the hope that familiarity will breed an unemotional acceptance of it.¹⁴ The method of disuse in early infancy may be illustrated by precautions taken in not unnecessarily startling the baby or giving him a feeling of insecurity through unskilful handling. Gradually he will become accustomed to the ordinary noises of the household, some of which he himself makes.

A second variation of the method of disuse is that of introducing objects and people to the baby under favorable conditions. The pet dog should not be brought to the baby when it is barking violently. The neighbor should be introduced while the baby is safe and happy in his mother's arms.

A third type of disuse is to avoid the use of fear in discipline. Ignorant or wicked nurses often build fears of policemen, burglars, or animals in order to secure obedience. The temptation to use fear for this purpose is great because it is such an easy way to control the behavior of little children. Shutting them in a dark closet after having created a fear of the dark, telling them the bears will get them, shouting at them, spanking them, telling them the policeman will carry away bad children — these means of discipline are still too frequently practised. Two types of children are likely to result from the use of fear as a means of controlling their behavior. One is the defiant child, who gains control of his fear and refuses to be intimidated. The other is a nervous,

¹⁴ Mary Cover Jones, "Elimination of Children's Fears," *The Journal of Experimental Psychology*, VII (October, 1924), 382-390.

timid child, who is afraid of innumerable things. Chronic anxiety in adults may be due to excessive fears of things and people acquired in young childhood. Locke, in his *Essay Concerning Human Understanding*, first printed in 1690, gives some very modern suggestions on this point:

Those who have children, or the charge of their education, would think it worth their while diligently to watch, and carefully to prevent the undue connection of ideas in the minds of young people. This is the time most susceptible of lasting impressions . . . The ideas of goblins and sprites have really no more to do with darkness than light yet let but a foolish maid inculcate these often on the mind of a child, and raise them there together, possibly he shall never be able to separate them again so long as he lives, but darkness shall ever afterwards bring with it those frightful ideas ¹⁵

The method of disuse, while not effective in eliminating fears, may be useful in preventing their development

Verbal appeal is of slight value during the first two years. The child's comprehension of oral speech is too limited to make it an effective vehicle of instruction concerning fears. Even with older children under experimental conditions the attempt to overcome fear with verbal explanations and reassurance met with slight success

Social imitation plays a relatively large part in preventing and dispelling fears of infancy. A baby's attitude toward many things is frequently determined by the cue he gets from his companion. One baby on the beach who was about to cry as a wave rushed up around his feet laughed and gurgled and splashed in the foam when he saw his sister do this. Moods may be communicated. Joyousness, calmness, and confidence are contagious and babies are very susceptible to these influences.

Children need reassurance in meeting strange, unfamiliar, and apparently threatening experiences. Adults should not ignore the fact that the situation, though not in itself dangerous, is terrifying to the child. If a mother talks soothingly, laughs, names the various kinds of animals, and encourages the baby's attempts to reach for, play with, or feed

¹⁵ John Locke, *An Essay Concerning Human Understanding*, Vol. I, p. 531. Oxford: Clarendon Press, 1894

them, interest and curiosity will gradually drive out fear of harmless animals. The mother's manner of meeting a stranger will often furnish a cue for the child.

To gain control over a terrifying situation is to dispell fear of it. A little child afraid of the sea or a bathtub full of water is quite willing to get a small pan of water and to play in it with little toys. The amount of water and the amount of splashing may be increased day by day until finally the child is willing to have the water come up all around him.

An indirect way of combating fear is to improve the baby's physical condition. Poor health increases the tendency to fear, since it is associated with withdrawal from new situations which require a certain degree of vitality and vigor. A characteristic of many diseases is increased fear and anxiety. When fatigued, even adults are more easily frightened and start more violently at a slamming door than when they are rested.

Intelligence and knowledge are likewise important factors in the elimination of unnecessary fears. The intelligent child learns how to meet many fear-arousing situations safely. They then have no terror for him. If he meets with success in many new situations, he develops self-confidence. If he repeatedly fails, he is likely to lose confidence in himself. The habit of meeting new situations with interest and curiosity rather than with suspicion and dread may have its foundations laid in these first two years. As James Stephens says:

Curiosity will conquer fear even more than bravery will, indeed it has led many people into dangers which mere physical courage would shudder away from.¹⁶

Learning Not to Get Angry.—Frequent outbursts of anger are a destructive rather than a constructive factor in child development. It is, therefore, desirable to know how they may be prevented and how treated when they occur. In the first place, unnecessary hampering of the baby's move-

¹⁶ James Stephens, *The Crock of Gold*, p. 9. New York: The Macmillan Company, 1926.

ments in bathing and dressing may be avoided by knowing the best technic of handling him and by providing clothing which is easily put on — garments open all the way down the back and fastened with a few easily adjusted tapes or buttons. Awkward and uncomfortable handling is a source of irritation. Since many babies thoroughly enjoy the bath, a bath battle is usually due to lack of skill in giving the bath. Even putting on winter clothing may be done with smiles and frolic. The mother should give care and thought to teaching the baby to accept cheerfully bathing, dressing, and other necessary details of everyday living. If the baby is interested in helping to put his arms into the sleeves, and his legs into the leggings, and in otherwise taking an active part in dressing himself, anger will be avoided because his movements and desires are no longer being thwarted, but rather are being aided by the mother.

In the second place, unnecessary interference with the baby's activities should be avoided. If carrying the baby away from some interesting activity is necessary, his attention may first be attracted to some little object which he may carry with him without interfering with his mother's plans.

In the third place, continued failure to get things he wants should be avoided. If the baby cannot reach something which he desires, the object should be moved a little nearer so that it may be obtained with reasonable effort, or a stick should be provided with which he can secure the object if he has sufficient sagacity to see the relationship between the stick and the object. Helping the baby in these indirect ways prevents the response of anger from occurring, and gives the infant a sense of achievement in place of a sense of failure and thwarting. Of course, there are some things he cannot do and some objects he should not touch, but in a home built for babies, such objects are not numerous, and the baby soon learns not to bother with them. Helping the baby to avoid frequent failure is not incompatible with the suggestion previously made to interfere as little as possible with the child's activities, in order not to remove stimuli to effort and reasoning. The assistance given should be just

enough to bring the task within the physical and mental capacity of the child.

It is not possible to prevent all outbursts of anger. The baby must learn that he cannot always have what he wants. It is not too early during these first two years for him to learn what he can do and what he cannot do in certain situations. Desirable conduct can be defined and learned without the concomitant of emotional disturbances.

When temper tantrums occur, the parent should recognize the bewilderment and anxiety which the profound organic disturbance is causing the child himself. Certainly his intense feelings should not be aggravated by spanking or further deprivation. One baby stiffened, kicked, and screamed one night when his mother brought the sleeping bag and began preparations for bed. She left him alone until he had become calm and was ready to help her with the bedtime routine. If she had let him go to sleep without the sleeping bag, a temper tantrum might have become part of the bedtime program. Spanking would have intensified the emotional outburst. Leaving him alone helped him to calm down and to identify his behavior as undesirable and unprofitable. As a result, the fit of temper in that situation was not repeated.

As is true of fear, physical irritations — sore gums, chapped skins, mosquito bites, and indigestion — predispose to anger. Regularity in feeding, dressing, going for an outing, and in all the other events of the day is the best background for growing happy babies with equable tempers. And "happiness should be the predominant note of babyhood."

It is not entirely clear psychologically how painful responses are learned. Perhaps the explanation lies in the relativity of satisfaction. Approval for not crying may be more satisfying than the relief that comes from tears. Any thought, feeling, or act is part of a total situation and, chameleon-like, changes its nature and meaning as the total situation changes.

SUMMARY OF SUGGESTIONS FOR THE
EDUCATION OF THE CHILD DURING
THE FIRST TWO YEARS

- I. Leave the baby free to grow — i.e., do not interfere unnecessarily with his activities.
 - A. Leave him unhampered by unnecessary and unsuitable clothing.
 - B. Allow him to look at things as long and steadily as he wishes to.
 - C. Leave him free to kick and squirm and creep so that he will be ready to sit and to stand when the time comes for him to do so.
 - D. Let him do things for himself, try to find a way out of his own difficulties, and make an effort to get the things he wants. Expect him to look out for his own needs as far as possible.
 - E. Encourage him to make his wants known through speech, and reward his successful attempts.
 - F. Play with him gently, often during routine bathing and dressing, but avoid causing him fatigue from too much unusual and exciting experiences.
 - G. Plan all the mechanical details of bathing and dressing so that unnecessary fear and irritation will be avoided.
 - H. Remove from the house as many things as possible that may harm the baby or necessitate many "don'ts." Glass bowls and heavy ornaments placed on a tablecloth may be pulled down on the baby. Vases and dishes which the baby may break should be placed entirely out of reach. Scissors and knives should be kept where only adults can use them, until the baby is old enough to learn to use them safely.
- II. Provide an environment which supplies the stimuli needed for this stage of development. Give opportunities for initiative and adventure. If suitable

materials are provided, the baby may be expected to make good use of them

- A. Place within reach of the baby, when he begins to want to handle things, a number of objects of a convenient size
 - B. Place near the baby two or three interesting objects when he is learning to look for, reach for, and recognize special objects
 - C. Provide colored balls and birds and other objects that are washable, nonbreakable, and fast in color for the baby to look at when he is lying awake
 - D. Take the baby from room to room and outdoors on the street so that he will have new sights to look at.
 - E. Provide a little pen or something by which the baby can pull himself to standing position when he feels so inclined.
 - F. Talk to the baby with clear, slow, accurate articulation and varied inflections.
- III. Provide a pleasant, sanitary nursery with washable walls and floors, low shelves, a box, or cupboards in which to keep toys; a sunny window; a low rocking chair; a low firm table; a bassinet of the simplest type; harmonious colors; one or two beautiful pictures changed from time to time; a few artistically illustrated books, such as those illustrated by Caldecott, L. Leslie Brooke, and M. Boutet De Monvel; a wicker wardrobe; and homemade or ready-made toys such as have been previously mentioned. If the baby cannot have a room of his own, a corner of the shared room may be furnished for him.
- IV. Treat the baby consistently with respect to the fundamental routines — respond in the same way to a situation each time until he knows what to expect. For example, maintain uniformity in the bedtime program. Do not hurry him to bed one night and

- permit people to frolic with him at bedtime another night. Do not sometimes leave him alone when he cries for attention and at other times take him up and cuddle him.
- V. Help him gradually to adjust his individual physiological rhythms to a suitable daily schedule and adhere to it within reason, thus maintaining regularity in feeding, sleeping, bowel movements, and exercise. Do not expect him to become civilized too soon
- VI. Avoid as far as possible stimuli which evoke undesirable responses
- A. Avoid slightly burned or spoiled food which might cause an aversion to that particular food
 - B. Handle the baby skilfully so as to avoid arousing fear of falling or anger at interference with his movements.
- VII. Maintain an appropriate balance in accordance with individual differences in children, being neither too stern or too solicitous. Temper the task to the child's ability. If the learning task is too difficult, he will give up and turn his attention to other things. Learning takes place when a child feels a need and recognizes that certain knowledge and skills within his power to acquire are necessary to satisfy it.
- VIII. Whenever you do anything for the baby, try to do it *with* him, not *to* him. Start the activity, then wait for him to do part of it. For example, when you pick up even a tiny baby, slide your hands under him, then wait until he curls up a little as an adjustment to being lifted. Have him hang on to you with knees and arms as soon as he can. He is then active rather than passive.
- IX. Do not be so careful and troubled about many details that the baby cannot be enjoyed as well as loved. An attitude of serenity on the part of adults and an adult example of happy work are important

factors in the child's education Do not be afraid of showing the baby a warmth of affection It is not necessary or desirable for parents to maintain a cold, scientific aloofness

- X. Make desirable behavior satisfying to the baby. Certain routine habits can most easily be formed by the same method that a trainer uses in teaching an elephant to play ball or a bear to beg — namely, by getting the act performed each day and immediately rewarding success. Solving his little difficulties is decidedly satisfying to the baby In general always try to make the things which the baby ought to learn, pleasant, and the things he ought not to learn, unpleasant Anatole France sums up this most important education principle when he says:

I would make lovable to her everything I would wish her to love.¹⁷

QUESTIONS AND PROBLEMS

1. Observe a baby during the first two years in his attempt to learn some process, such as picking up an object, playing pat-a-cake, marking on paper, holding a cup to drink out of, using a spoon, etc.
2. Give examples of cases in which satisfaction has encouraged and annoyance or pain has retarded learning.
- 3 Explain learning as a modification of behavior. Under what conditions will the most effective learning probably take place?
- 4 Explain development as the result of learning and maturation.
5. Explain and give examples of how learning may take place through the process of conditioning
- 6 Explain and illustrate the process of re-education
7. How may some of the situations which make children angry be avoided? Situations which make children afraid?
- 8 Show how each of the "don'ts" listed in this chapter might have been avoided
- 9 Make a list of appropriate play materials for a two-year-old child which the poorest parents could afford.
- 10 Plan safe places where babies might play in several neighborhoods with which you are familiar.

¹⁷ Anatole France, *The Crime of Sylvestre Bonnard*, p. 198. New York: Dodd, Mead and Company, 1925

11. If a mother complained to you about disobedience of her two-year-old child, what questions would you ask about the materials and opportunities for play which the child has?

12 Give some helpful concrete suggestions for teaching a child to dress and feed himself. Consider the time for beginning training, ways of mastering mechanical difficulties in the process, use of approval, avoidance of fatigue and dissatisfaction, etc

13 How would you go about putting a baby to bed who began to cry and kick at the word *bed*?

CHAPTER VII

ESPECIAL PROBLEMS OF THE FIRST TWO YEARS

A problem may be considered as a deviation from expected development, it may even be thought of as a special kind of development, even as a necessary step in learning. Blatz,¹ in an excellent chapter on the physiological appetites, has wisely said that these apparent aberrations in behavior

are part and parcel of life and that too much significance is attached to their seemingly *abnormal* aspect and too little to their value in the total learning scheme¹

Some of the problems that frequently arise during the first two years are problems of health, others are psychological and social in nature

PROBLEMS OF DISEASE PREVENTION

Rickets. — This is a disease of infancy and childhood in which the calcium and phosphorus metabolism is disturbed. Many factors may be involved, among which are an inadequate supply of calcium and phosphorus, and a deficiency of vitamin D and the short ultraviolet radiations of the sun. A disturbance of the normal functioning of the parathyroid glands is usually associated with the incomplete deposition of lime salts in the growing parts of the skeleton. The prognosis for recovery is good or poor according to the degree of bone deformity² Flabbiness of muscles usually accompanies the bone deformity and together they cause the

¹ William E. Blatz, "The Physiological Appetites," in *A Handbook of Child Psychology* (second edition revised), Carl Murchison (Editor), p. 731. Worcester, Mass. Clark University Press, 1933.

² Martha M. Eliot and Edwards A. Park, "Rickets," in Brenneman, Joseph (Editor), *Practice of Pediatrics*, Vol. I, Chap. 36. Hagerstown, Maryland: W. F. Prior Company, Inc., 1937.

child to be irritable when he is moved. An increased susceptibility to other diseases has been reported in animals with marked rickets. Poor teeth, as might be expected, are likewise associated with this deficiency disease. The disease thus may affect muscles, bones, teeth, behavior, and susceptibility to other diseases

Rickets occur in small infants not receiving vitamin D during the winter months, although their diet is otherwise excellent. It is a preventable disease. Babies need not have rickets. It has been said that in one city there are no longer any rickety babies for medical men to study because all the mothers have learned what to do to prevent the disease. Even colored mothers whose older children have all had severe cases of rickets will now say, "Doctor, when yo' gw'an to begin giv n the baby cod-liver oil?"

Cod-liver oil is important in the prevention and cure of rickets. In the Netherlands, for example, rickets appears in the winter among many babies whose diets are not supplemented with cod-liver oil. Doctors frequently give pregnant and nursing mothers cod-liver oil. The baby himself is usually given about half a teaspoonful of cod-liver oil daily during the second month and a gradually increasing amount during the first year.

Cod-liver oil, however, is only one source of vitamin D. Other fish oils such as halibut liver oil also supply the vitamin, and the vitamin D content of certain substances, such as milk and ergosterol may be markedly increased by irradiation with ultraviolet rays. (The preparation, viosterol, is irradiated ergosterol.) One teaspoon of cod-liver oil or one quart of irradiated milk supplying an equal amount of vitamin D units gave adequate protection against rickets. Even irradiated evaporated milk appeared to be an adequate preventive but not a reliable curative agent for rickets in Negro infants. Irradiated milk and egg yolk are generally recommended as additional safeguards for infants who are likely to get rickets, rather than as the one protective measure to use.

Irradiation of the infant's skin with the short ultraviolet

rays of sunlight or special lamps directly increases the vitamin D content of the body. One of the Children's Bureau folders³ gives a detailed description and practical suggestions for exposing infants to sunlight.

Sun baths may be given as early as at three to four weeks of age. Care should be taken to avoid the hottest rays of the sun in warm weather but to take advantage of the warmest rays in the winter. By turning a baby's head so that first one cheek and then the other receives the sun's rays for the first month of life and by raising his head slightly thereafter, his eyes will be protected. The article gives the following adequate directions for giving sun baths at different seasons:

Spring—A baby born in the spring may begin sun baths by the middle of March or the first of April in a large part of the United States—in the South even earlier. For his first outdoor sun bath let the sun shine on his face and hands for 10 to 15 minutes, with his cap pushed back or taken off. Each day lengthen the time—by 3 minutes for a fair baby and by 5 minutes for a dark baby. After the face and hands are used to exposure, roll up the sleeves. Soon the stockings may be taken off, then the dress, shirt, and band. After a month or two the baby should be getting half an hour of sun in the morning and half an hour in the afternoon, wearing only a diaper. Spring sun baths are best given in the late morning and early afternoon.

Summer—A baby who has his first sun bath in warm weather may have all his clothes taken off except the diaper. Let the sun shine on him for 10 minutes—5 minutes on the front and 5 minutes on the back. If the weather is very warm, a 2-minute sun bath is long enough at first. Lengthen the sun bath each day by 3 or 5 minutes. In very warm weather a 1-minute increase a day is enough.

The sun bath may be lengthened gradually to three-fourths of an hour, and many babies, especially those over 4 months, may have an hour's sun once or even twice a day. Summer sun baths are best given between 8 and 11 A.M. and after 3 P.M., when the sun is not too hot.

Longer sun baths are needed in fall and winter than in spring and summer, because in fall and winter the ultra-violet rays are weak. In cold weather a sun bath can be given indoors near a window opened at top or bottom, the baby lying in the patch of sunlight

³ *Sunlight for Babies*. Washington, D. C. United States Department of Labor, Children's Bureau, Folder No. 5 (Revised), 1933.

coming through the open space. By holding her own hands in the sun the mother can tell how warm it actually is. The room should be heated and the doors closed to prevent drafts. Watch the baby carefully and cover him if the sun goes behind a cloud.

At the first indoor sun bath let the sun shine on the baby's face, hands, and arms for 15 to 20 minutes; after a few days uncover his legs also. Lengthen the sun bath gradually until it lasts 1 to 2 hours. When the sun is warm enough, even the baby's shirt may be taken off. In the coldest weather it may be better to give two short sun baths a day instead of one long one.

After a baby is used to indoor sun baths, he can begin outdoor ones very early in the spring.

On many sunny days in fall and winter the baby should be put outdoors in the middle of the day for a long sunning on face and hands. In the sun the thermometer may register 40 to 50 degrees higher than in the shade, and if the baby is protected from the wind the sun will help to keep him warm ⁴

The Journal of Home Economics ⁵ gives the following directions for a sun suit: These suits are

cut from an ordinary romper pattern with straight, short legs, deep-cut armholes, and low neck. They button on the shoulders or down the front. The lower portion is made of gingham, percale, or a sturdy cotton print which will withstand frequent contacts with mother earth and many launderings. The upper portion covering back and chest is a thin semi-transparent material such as voile or the coarsest bobbinet. This thin material should be faced back by inch-wide folds of the heavier material to make it stronger.

"Skyshine," as well as direct sunlight, has value. The full value of "skyshine" is derived only if nothing intervenes between the infant and the dome of the sky.

Use of Windows through Which Ultraviolet Rays Pass.—Window glass is being manufactured through which the ultraviolet rays pass more or less completely. This special quartz glass has the disadvantages of being expensive, not effective in transmitting "skyshine," and, in general, less efficient than several varieties of lamps now on the market which manufacture ultraviolet rays. If the lamps are used under the direction of a physician, the results are decidedly

⁴ *Sunlight for Babies*, *op cit*, pp. 4-5

⁵ "Sun Suits for Children," *The Journal of Home Economics*, XIX (August, 1927), 455. Quoted by permission of the publisher.

beneficial, especially during the winter months in northern cities where the smoke and cloudy weather seriously reduce the amount of natural sunlight

Special sources of vitamin D and sunlight are a supplement to, not a substitute for, a diet adequate in other respects. The calcium and phosphorus in milk are essential bone-building materials. Mother's milk is best in every respect, unless the mother has tuberculosis or her supply of milk is otherwise affected. There was a high incidence of rickets among Swedish and Finnish infants who were suckled only three to four months and given undiluted cow's milk, whereas rickets was practically unknown, in spite of the short summer and poor dwellings, among Lapland children who were given mother's milk for about one and a half to four years, supplemented by frozen or dried meat and butter. Human milk is also rich in other vitamins. It is four to six times richer in vitamin C than the average cow's milk. Its vitamin A content can be raised by increasing markedly the mother's intake of vitamin A or carotene, a substance from which vitamin A may be derived. Mother's milk supplies more iron as well as more vitamins. Cow's milk pasteurized and irradiated is next best. McCollum⁶ concluded that

there is no evidence that raw milk is superior to pasteurized milk in infant feeding. In fact, the latter is better digested by infants and possesses the added factor of safety

One quart of milk, on the average, supplies 676 calories (more than half of the total calories required for an eighteen-month-old boy), 32 grams of protein (more than enough for the day), more than the gram of calcium required, almost all of the phosphorus requirement, approximately half the daily requirement of iron, and some iodine. It probably supplies sufficient vitamin A and is a very good source of vitamin B. With milk as a base an adequate diet can easily be built. The juice from one orange adds iron and a good deal of vitamin C. An ounce of oatmeal adds calories,

⁶ E. V. McCollum, "Nutritional Aspects of Milk Pasteurization," *Public Health News*, New Jersey Department of Health, XIX (February, 1935), 387-389

protein, and iron. One scant fourth of a cup of green vegetable is valuable for its iron, vitamins, and bulk. An egg yolk supplies iron and vitamin A. The white is not used for two reasons, first, because more protein than is necessary has already been supplied, and second, as a precaution in the case of children who may have a tendency to be allergic to egg white. The two slices of bread and butter, and baked potato add calories, vitamins A and B, and minerals. Cod-liver oil will make up any deficiency in vitamin D. The day's food for children of other ages may be selected by the same pattern — simply increasing the amounts and adding a greater variety of cereals, bread, fruits, and vegetables.

Diphtheria. — For many years diphtheria has been one of the most serious problems of infancy. Its onset is insidious. The child's initial symptoms may not be referable to the throat, but consist of slight fever, malaise, and sometimes headache or abdominal pain. For that reason the throats of all sick children should be examined and antitoxin given whenever diphtheria is suspected clinically.

With the newer knowledge of preventive measures, sickness and death from diphtheria are fast being reduced. In Birmingham,⁷ over a period of eight years, only fourteen cases of diphtheria have occurred in 58,000 immunized children. In Wisconsin,⁸ since 1910, the number of deaths from diphtheria has dropped from 429 to 18. The number of cases has decreased at about the same rate. It is the baby's right to be immunized against diphtheria as early as six months. The family physician may be expected to understand the method of using one injection (Lederle) or two injections of diphtheria toxoid. Protection is obtained from three to six weeks after inoculation. Immunization is the ounce of prevention that is worth a ton of cure after the baby has caught the disease.

⁷ Mathew Burn and Vera Fellowes, "Diphtheria Immunization," *Lancet*, II (November 24, 1934), 1181-1185

⁸ H. M. Guilford, "Diphtheria in Wisconsin," *Wisconsin Medical Journal*, XXXIII (December, 1934), 899

MAJOR MODIFICATION OF BASIC
PHYSIOLOGICAL PROCESSES

The baby must eventually modify some of his basic physiological needs to meet social demands. He must adjust to an adult regulation of time; he must learn to eat like an adult; he must gain control over his natural processes of elimination. This should be accomplished with a minimum of emotional disturbance.

Teething — About the middle of the first year the baby carries everything to his mouth. One reason for this action is that biting on something hard brings relief to the pain caused by the teeth trying to push their way through the gum. Gum tissue is very tough and hard to pierce. It is natural for the baby to want to bite and chew on something hard under these circumstances. Washable toys can be kept sanitary. Nothing should be left lying around which ought not to go into the baby's mouth, for that is quite sure to be its destination. This gum irritation may predispose the baby to anger, and special care should be taken to avoid unnecessary thwarting and interference with legitimate desires.

For the first nine months, breast-fed babies have the advantage over bottle-fed babies. They have, in general, less teething trouble and fewer digestive disturbances, and a smaller number die in the first year. The nursing mother can help to insure a good quality of milk by maintaining a highly satisfactory diet such as has been previously mentioned. Before the end of the first year the baby will begin to eat for himself many of the foods included in the mother's diet.

Weaning. — Weaning is a fundamental problem of adaptation, whether it be the weaning from the mother's breast in infancy or psychological weaning at adolescence. The process continues from infancy in the gradual separation from the infantile satisfactions that arise from close dependence upon adults.

The chief reason why weaning is difficult is that the

child is required to give up a source of satisfaction, in this case, the nursing situation which he enjoys. The baby should not feel that weaning is a punishment. Accordingly, it is wise to begin taking the breast or bottle away at the time when it gives the baby the least satisfaction. This can probably be done more easily at seven months than at fourteen months. Weaning is now a much more gradual process than it used to be. Weaning that is too abruptly and unsympathetically handled may create anxiety and irritability. Orange juice, tomato juice, prune juice, and cod-liver oil in small amounts are introduced by many pediatricians during the second month. Water in which vegetables have been cooked may be given in the fourth month, so that the baby becomes accustomed to the taste of vegetables. A thin cereal gruel may be substituted for one of the feedings as early as the fifth month, and may be gradually made thicker and more like breakfast porridge. Vegetables and stewed fruit put through a sieve may be given in the seventh month or earlier. A little bit is given at first and the amount is slowly increased. Half a teaspoonful of a vegetable is enough to give for the first time. Even after the ninth month, new foods should be introduced slowly. It may easily be four months before the baby is completely weaned. There is no need to hurry and no need to begin at a specified time if the weather is very hot, or the baby not quite so well as usual. The process of "weaning to" new foods should be given as much attention as the process of "weaning from" the nursing satisfactions of early infancy.

Bladder Control. — Bladder control in the baby is at first the parent's responsibility. It is possible, beginning in the first week, to study the times at which the baby urinates, and to prevent him from becoming wet and uncomfortable. By being picked up during the night at a certain hour — about ten o'clock in the first part of the training period and eleven o'clock later — and allowed to urinate, he can frequently go through the night without wetting himself. As soon as he wakes in the morning, he should be taken to the

toilet immediately so that he starts the day dry. Thus, he becomes accustomed to that dry comfortable feeling, and is annoyed by that uncomfortable wet feeling. By gradually increasing the intervals the danger of putting children on the toilet too frequently with a resulting lack of bladder growth is avoided. It may be better to stretch the time as far as possible even at the cost of an occasional accident.

Near the middle of the third year is early enough for the child to assume full responsibility. Nervous and emotional strain may result from an attempt to gain control too early. Beginning at one to two years the question, "Do you have to go to the toilet?" should receive the reply "Yes" or "No." Soon after this stage he should come of his own accord and ask to be taken to the toilet or go by himself if the toilet facilities are well-planned. Scolding hinders more than it helps. Wetting is not done wilfully, and should be dealt with patiently. Usually training for control at night should not be begun until daytime control has gained headway. Control at night is likely to be achieved somewhat later than control during the day.

Although there are wide individual differences, one may arbitrarily state that lack of voluntary control of bladder elimination in the daytime after the second year, and in the nighttime after the third year, may be considered "enuretics."⁹

Enuresis, or lack of bladder control, may be of two types — one arising from physical causes; the other from psychological causes. The former accounts, perhaps, for about 5 per cent of the cases. Bleyer, in a clinical study of 129 boys and 123 girls, concluded that "atropine and massage of the bladder were the only measures found to be effective in the treatment of true enuresis."¹⁰ Steele,¹¹ on the other hand, concluded from his study of the problem that the

⁹ William E. Blatz, *op cit*, p. 752. See also H. Jalmar Fletcher, *Bladder Control in Infancy and Early Childhood*. Studies in Child Welfare, Vol. V, No. 4, 1933.

¹⁰ Adrien Bleyer, "A Clinical Study of Enuresis," *The American Journal of Diseases of Children*, XXXVI (November, 1928), 989-997.

¹¹ Arthur H. Steele, "Nocturnal Enuresis," *The Journal Michigan Medical Society*, XXXIII (August, 1934), 455-458.

best results were obtained by observing the time of night at which the child usually wet the bed, waking him one hour before the expected time, in order that he might voluntarily empty the bladder. The bed-wetting habit was usually controlled by this method in from one to six months. Blatz¹² recommended a similar training procedure and found the most obstinate cases of enuresis to respond to it within three to nine months. Arousing the child's sense of responsibility for control by keeping a chart of dry and wet nights is commended. This objective evidence of his accomplishment is his reward. Every effort should be made not to increase the child's feeling of guilt and inadequacy. Neither of these methods, however, reach underlying causes of insecurity and desire for attention which frequently seem to be the motivating factor in enuresis. Certainly, severe enuresis involves deep-seated personality difficulties which require expert analysis and therapy.

Bowel Control — It is a strain to gain control over elimination at twelve months of age, with a possible danger of getting over-control and constipation. Temper tantrums and other behavior problems may result from overemphasis on this habit. Too early efforts to secure control may result in poor control. If the baby reverts to lack of control after a short training period, the next attempt at education is usually more difficult than the first. Gesell reported "reasonable regularity and control" of bowel movements in the majority of children at eighteen months and an assumption of responsibility for asking to go to the toilet in 85 to 100 per cent of the cases. Although this relatively early responsibility on the part of the child for bowel control is socially gratifying, it may not be physiologically wise.

Responsibility for both bladder and bowel control may legitimately be carried by the parent until the child is at least two and a half years old. Because of possible regressions three-year-olds in the nursery school are required to have a complete change of clothing. In some cases there

¹² William E. Blatz, *op. cit.*, p. 754.

has been far too much stress laid upon the child's establishing this social essential of bladder and bowel control early.

Eating. — It is astonishing how soon the baby adjusts to a regularity of schedule that is probably far different from his own biological rhythm. He learns to be hungry at the appointed feeding time, if he is consistently fed at regular intervals. If he cries from hunger half an hour before feeding time, the crying may be arrested by giving him a drink of water or changing his bodily position. If a baby continues to cry before feeding, a change in routine may be indicated that would correspond more closely to his present physiological status. Things outside the baby himself, such as traveling, the cook's departure, unexpected visitors, or parties, should not generally be allowed to interfere with the progress he is making in acquiring the necessary routine habits of our society. Parents who have never adjusted themselves to a definite schedule experience a real struggle in maintaining regularity for the baby. This is one of many ways in which children educate their parents.

Eating is frequently less interesting to the not-very-hungry baby than other things. Accordingly, such a baby should be fed in a room relatively free from distractions. Some babies would rather look than eat. If there are too many interesting sights and sounds, the baby may prefer to pay attention to them rather than to the feeding process. Most babies love excitement, and if they are not too hungry, would rather see their mother's consternation at their lack of appetite, than eat.

It is not unnatural for a baby to spit out a new food. Doing so does not mean that he dislikes it. It may merely be his reaction to a new consistency or flavor. If well-prepared, wholesome food is placed before the child who feels free to choose whether he will eat it or not, without comment by the parent and without being offered a substitute, he will learn to acquire "a reasonable repertoire" of tastes and feel no loss of personal prestige in the eating situation. Among the thirty-six children at St. George's Nursery School over a period of six months there were only

103 refusals of food out of a total of 7,438 opportunities. Twelve children never refused any food. The three foods most frequently refused were rice, casserole of beef and tomato, and vegetable marrow¹³

Sleeping — There is no justification for the too-frequent bedtime battles between parent and child. Sleep is a normal response of childhood. If the child has learned not to sleep, a normal response has in some way been modified. The child's natural rest rhythms can be modified so as to conform to the convenience of adults. After the first month or two the waking hours gradually increase in length until, at the end of the first two years of life he is accustomed to a long nighttime sleep and a daytime nap of about one to two hours.

Although individual children vary in their sleep requirements and no one can decree exactly the amount of sleep a child should have, bedtime for a particular child should be regular. The many things that interfere with a regular bedtime should be avoided so far as possible.

Mrs. Fenton¹⁴ tells how her baby in the twenty-third week developed the habit of wakening and crying about an hour after his evening feeding. The first night, the mother thought colic was causing the crying and she held him up over her shoulder, soothed him, and after an hour succeeded in getting him to sleep. The performance was repeated for three nights. On the third night, the mother made sure that there was nothing to make the baby uncomfortable. Then, when he awakened and began to cry, she paid no attention to him. He cried for twenty minutes before dropping off to sleep. The next night he cried in the same way for seventeen minutes. The following nights the time of crying gradually dwindled from ten to seven, to five, to four minutes, and finally to zero.

When the Dionne quintuplets were between two and three years old, they apparently decided that bedtime should be

¹³ William E. Blatz, *op cit*, pp. 742-743.

¹⁴ Jessie Chase Fenton, *A Practical Psychology of Babyhood*, p. 267. Boston: Houghton Mifflin Company, 1925.

romping time As soon as they were put to bed, they bobbed up again The nurses patiently replaced them in a horizontal position time and again until the quins finally got the idea that they were to go to sleep when put to bed.

Children should not be "sent to bed" After an active day and following a quiet, happy preliminary bedtime period, they should welcome sleep in a clean, airy, familiar room and appreciate the pleasant aspect of repose.

Overfatigue should be avoided in the case of young children. When a child first begins to creep and walk, he is fascinated by his own locomotion and may become so tired he cannot sleep. For such a child short periods of rest during the day are essential Half an hour of activity and ten minutes of rest seem to be more beneficial than an hour of activity and twenty minutes of rest

General Considerations. — In weaning from the breast, in establishing bladder and bowel control, in building good habits of sleeping, eating, and drinking, care must be taken to wait for sufficient maturity before trying to change the behavior. The child must have the capacity to learn before he can be trained.

Children will resist anything suddenly introduced or anything that is too much at variance with the *status quo*.¹⁵

If the time is ripe for the development of these basic social habits and if the training is patient, persistent, and consistent, few problems connected with them should arise. There is no necessity or justification for taking all the joy out of the normal functioning of these physiological processes, and by over-anxiety making the daily routine barren of any enjoyment to either parent or child.

THE PROBLEM OF THUMB-SUCKING

During the first year of life thumb-sucking is to be expected. At six months of age the baby frequently puts his hands and everything that is handy into his mouth. The parent need not be greatly concerned about spasmodic

¹⁵ William E. Blatz, *op. cit.*, p. 737

thumb-sucking during the first two years¹⁶ The tendency is likely to fade out of its own accord if no one makes a fuss about it Some of the most troublesome cases seem to have been caused by someone who attached emotional tension to it before the child had a chance to outgrow the habit of his own accord.

There are several theories of the causation of thumb-sucking It may be a symptom of physiological or psychological distress. Some psychologists attribute the habit primarily to insufficient sucking at the breast or bottle Others consider it an indication of dietary deficiency. Still others say it is merely a symptom of underlying emotional difficulties. There is probably some truth in each of these theories and certainly an indication of the need for studying each individual case.

Effects of Persistent Thumb-Sucking — The effect of thumb-sucking on the occlusion of the teeth and on the shape of the dental arch has been frequently noted. The deformity of the teeth takes the form of a forward displacement of the upper front teeth and sometimes a retrusion of the lower teeth.¹⁷ The most damage to the shape of the dental arch is done by the type of thumb-sucking in which the rounded surface of the thumb is toward the roof of the mouth.

When the habit, broken in infancy, is resumed later, the permanent teeth tend to be pushed out of position in the same way that the first teeth were. One of the most difficult types of deformity to correct appears to be that caused by children who persist in sucking their thumbs, even a short time before going to sleep

In six cases reported¹⁸ there was a history of thumb-sucking but no malocclusion. In these cases the habit was broken sometime between their first and second year of

¹⁶ Gertrude A. Heering, "A Study of Thumb Sucking in Infants from Two to Seventeen Weeks of Age," *Child Development*, III (September, 1932), 273-277

¹⁷ Samuel J. Lewis, "The Effect of Thumb and Finger Sucking on the Primary Teeth and Dental Arches," *Child Development*, VIII (March, 1937), 93-98.

¹⁸ David M. Levy, "Thumb or Fingersucking from the Psychiatric Angle," *Child Development*, VIII (March, 1937), 99-101.

age. Correction of the habit frequently results in spontaneous correction of the deformity by nature without orthodontic appliances. This natural procedure is usually the best to follow with the primary teeth.

The psychological effects of thumb-sucking may be more serious than the physical consequences. Older children who are ashamed of the habit but unable to break it may experience a detrimental loss of self-confidence¹⁹ They may attempt to conceal their crooked teeth by talking or laughing with the palm over the lips, thus limiting their spontaneous conversation and introducing a factor of self-consciousness into social relationships

Prevention of Thumb-Sucking.—The hand can early be weaned away from the mouth in the same way that the baby is weaned away from his mother. One of the best ways of doing this is to provide other things for the hands to do. Sets of pans, boxes, blocks or cups which will fit one inside the other, jars with lids that may be taken off and put on, balls, books with non-tearable pages to turn, boxes with little objects that may be put in and taken out, pegs to fit in a board, an abacus, and other toys that the baby can do something with—all these keep the hands so well occupied that they do not seek the mouth as a “parking place.” If the tendency is not corrected in this natural way, it should probably be left alone until the child himself is old enough to co-operate in the correction of the habit. Scolding, nagging, or otherwise attracting attention to this and to other nervous habits may increase the tendency to seek these undesirable ways of response. Any form of therapy should be directed toward the total situation, not toward the particular problem.

NEGATIVISM OR RESISTANT BEHAVIOR

Nature of Negativism.—At some time during the second or third years a child frequently becomes “contrary.” He says “no” even to reasonable suggestions. “Stubbornness,”

¹⁹ See Thom's excellent discussion of this problem in *Everyday Problems of the Everyday Child*, pp 104-112

the mother may call it. He "wants what he wants when he wants it." He insists upon doing the opposite of what the mother or nurse tells him to do. It is so common among young children that it must be considered as a phase of their development, not as a deviation from the normal. In other cultures, likewise, the same tendency has been found. Japanese investigators reported the appearance of a negative attitude toward the examiner at about the end of the first year which predominated in the test situation during the succeeding two or three years. This kind of behavior appears to reach a peak near the end of the second year with girls and near the end of the third year with boys and appears to last longer and to be more severe in boys. After the third year it tends to decrease with age.

Explanations of Negativism. — This resistance to authority is often explained as an attempt on the part of the child to assert his newly discovered self, to prove that he has a mind of his own, to develop his own individuality. It is an attempt to make the world conform to his whim. Of course, this feat is impossible. The world is indifferent and strong. The child learns this through his early experiments in resistance.

Negativism may also be explained in terms of lack of knowledge and experience and competence in verbal expression. The two- or three-year-old is constantly confronted with situations that he does not understand and is expected to do things for which he has not yet acquired the necessary skill. His first reaction to these difficulties is negativism. Refusal to act is a defense against demands that are beyond his power. Later he learns by experience, if his environment is favorable, that there are more satisfying ways of meeting difficulties and he therefore gradually ceases to use his first infantile "way out."

Frequently a child's resistant behavior is justifiable, even by adult standards. Sometimes he is accused of stubbornness when he is merely slow. The parent needs patience in waiting for such a child. Sometimes a child is accused of contrariness when he shows unwillingness to respond docilely

to unreasonable demands. A child, as well as an adult, is justified in resisting unnecessary or constant interference. If he is abruptly interrupted when intent upon some project of his own, he is justified in resenting such interference by saying "I won't" or "No, No, No." Sometimes a child responds in a negative way to a person he doesn't like. He refuses to do anything such a person asks. Even praise from the disliked individual is rejected. Sometimes a child's refusal to act is a justifiable defense against demands that are beyond his power.

Combating Negativism — Margaret McMillan, an English nursery school worker,²⁰ described a typical case of negativism which she frequently meets.

The two-year-old comes into our open-air nursery school a very unhappy little person. Pale, white, rickety. . . His first idea is that *he is not going to be coerced*. "No! No! No!" cries a little voice "No bath!" "No dinner!" "No clean pinafore!" Above all, "No sleep!" A hundred times I have found one panacea for this wild and multiple revolt. It is acquiescence, consent. . . . It is not coaxing he wants . . . This sense restored, it is wonderful to see how quickly an attitude of calm and power to note or observe, follow. . . .

Miss McMillan puts the child into

an open-air shelter, whence he looks out over a little fence which he could bestride, on a moving, changing world. . . . Soon, it may be a week or only a day, he stops crying altogether and turns his attention to other things.

Then he is attracted gradually to the other children and their activities, and makes some movement to join them. His attempts to join are met, of course, with welcoming smiles.

For individual children at home as well as for nursery school children the most effective treatment of negativism is indicated by its causation. Guidance consists indirectly of avoiding unreasonable demands on the child and abrupt, unnecessary interference with his activities, and directly of

²⁰ Margaret McMillan, "The Nursery School in Organic Education," *American Childhood*, XII (February, 1927), 5-7

helping him to discover better ways of meeting difficult situations

Ability to put oneself in the child's place is a valuable asset in dealing with all kinds of behavior problems. Too frequently there is no common ground between the child's world and the adult world. To the child a certain activity is pleasant and constructive while to the adult it is naughty. One two-year-old was in the "me too" stage, wanting to do everything her slightly older sister did. One morning the older sister found an eggshell on the table, crushed it as she had seen her mother do when making coffee. The little one looked for another eggshell, but there was none. She then spied a basket of fresh eggs, dropped one of them on the floor, and squashed it with her heel, saying gleefully, "Me break egg, too." On such occasions, if the mother stopped to try to understand the meaning of the act to the child, she would seldom err in her treatment of the situation. One mother says that she sometimes sits in the baby's place and tries to see things from his point of view.

QUESTIONS AND PROBLEMS

1. What is the cause of rickets? How may this disease of infancy be prevented?

2. Describe the weaning process. Is it a longer or a shorter process than it used to be?

3. What causes of children's dislike for foods may have their origin in the first year?

4. Observe and record one baby's progress in learning to like a new food.

5. How should new foods be introduced?

6. There is a difference of opinion regarding the extent to which a crying baby should be given attention. What plan of dealing with a baby who cries in the night would you recommend?

7. What are some of the underlying causes of thumb-sucking? Tell of methods of dealing with thumb-sucking which you have found to be effective or futile. What is the objection to the method of mechanically limiting the baby's hand movements?

8. Observe a child two to three years of age and record in detail the situations in which he shows stubbornness or contrariness. Try to dis-

cover the causes of the resistant behavior and suggest the best method of acting in the situation.

9. Study the probable causes of delay in talking in the case of a child who has come under your observation.

10. What suggestions would you give to a mother who is interested in helping her child to acquire bladder control?

11. Describe other problems of developments which you have met in the case of young children.

12. How should these so-called problems of early childhood be viewed?

CHAPTER VIII

HOW TO STUDY THE BABY

Parents, teachers, and other persons closely associated with children are constantly studying them to some extent. It is not expected that parents or teachers, untrained in the field of child psychology, can use technical methods of child study to make a scientific contribution to research. They can, however, use the simpler methods of child study to gain a better understanding of individual children and a more objective attitude toward them. Records of children's behavior hold, as it were, a mirror up to parents and teachers which discloses inadequacies in their treatment and their effect upon the child. They reveal developmental trends and call attention to responses that should be encouraged and experiences that should be provided.

Sources of Material for Child Study — There are three main sources of information about children: (1) their behavior in natural situations, test situations, and experimental setups; (2) their products, such as letters, stories, essays, drawings, and things they have constructed; and (3) their verbal comments which indicate their thoughts and feelings and aid in the interpretation of their behavior. In addition to these major sources of information the childhood memories of adults may throw considerable light on child development.¹ In studying infancy reliance must be placed chiefly on the first source, namely, their observed and measured behavior.

Instrumental Methods Used by Research Workers. — The research worker has at his command a background of knowledge and apparatus that are not available to the lay person. Improvements are continually being made in instrumental

¹ Walter de la Mare, *Early One Morning in the Spring*. New York. The Macmillan Company, 1935.

methods of studying children. The cinema makes possible detailed, minute, accurate, permanent records of infant behavior and growth which can be subjected to deliberate study by experts. Stereoscopic pictures and cameras that snap three views simultaneously have contributed substantially to the study of the development of children. By means of the galvanometer differences in electrical potential which may be significantly related to emotional behavior have been studied in infants as young as three or four months of age. An experimental cabinet² makes possible still more elaborate physiological studies of emotions. An apparatus has been designed and built for the purpose of obtaining simultaneous records of

changes in pulse rate, relative limb volume, respiratory rate and amplitude, apparent electrical resistance of the skin at two different parts of the body, muscular tension, and gross body movement.³

Technics for measuring volume of different parts of the body have been developed and progress made in perfecting existing anthropometric measures.⁴ The metabolism chamber has been used increasingly in studying the energy expenditure of infants and children under different conditions of rest and activity. By means of a special infant cabinet it is possible to control conditions of sound, light, heat, humidity, clothing, and the presence of other persons. The one-way observation screen enables a person to see what a child is doing without himself being observed and thus influencing the total situation. The stabilimeter and polygraph recording technic, an instrument devised to record automatically each movement the child makes, reduce the study of infant activity to precise objectivity. These and other instruments

² Harold E. Jones, "An Experimental Cabinet for Physiological Studies of Emotions," *Child Development*, VII (September, 1936), 183-188.

³ N. W. Shock, "A Continuous Recorder for Obtaining Synchronous Curves of Physiological Responses to Stimuli in Human Subjects," *Child Development*, VII (September, 1936), 169-182.

⁴ Howard V. Meredith, "The Reliability of Anthropometric Measurements Taken on Eight- and Nine-Year-Old Males," *Child Development*, VII (December, 1936), 262-272.

are now being used by research workers to obtain accurate data on child growth and behavior.

By means of these instruments and experimental and clinical methods our information about infant development is gradually being extended. Thus far, our knowledge has been obtained from relatively small groups of children. The same careful study of other groups needs to be made in order to ascertain whether the general developmental sequences described are characteristic of similar groups and how they vary in different economic and social situations. Even more important than an accurate description of behavior as it is manifested under different conditions, is the study of the processes by which certain important end results are obtained.

Methods and Technics of Child Study.—Technics of studying children comprise various forms of observation including rating which is essentially directed observation; testing; the interview; the questionnaire, and the autobiography. These technics are used in the experimental and the clinical methods of child study. The experimental method makes its most important contribution to research; the clinical method, to service to the individual child. The importance of the clinical method for research purposes, however, is rapidly increasing. In the experimental method certain conditions are set up and the results accurately recorded and critically studied. The clinical method aims to unify information about the individual obtained from all available sources. In the study of infants observation plays a very important part.

The Technic of Observation.—Observation may be described as a "natural-scientific method" in which only the observed behavior of the individual is recorded. Observation varies from the most precise to the most casual. The method of controlled observation is valuable in discovering what the baby can do under defined conditions. There is a less specific kind of observation which aims to understand the total situation in which an observed behavior occurs and to bring to bear on the problem a background of

psychological acumen, or even a co-operative approach from a number of disciplines — sociology, anthropology, anatomy, physiology, and pediatrics as well as psychology and psychiatry.

Although less accurate than laboratory observation by a skilled psychologist, lay observation is being encouraged because mothers or teachers have opportunities to observe children for long periods of time, under natural and varied home conditions. For example, a mother, under the weekly guidance of a sociologist, may be encouraged to make daily observations on the behavior of her child. This method makes possible a study of the influence of the family contacts on the development of the child. In certain cases the investigator has himself gone into the home and daily observed the attitudes and behavior of parents and children in the family situation. The anecdotal records that teachers are making in increasing numbers represent an application of the technic of observation to everyday classroom situations. Finally, there is a tendency to encourage older children to observe themselves and to record their daily activities, and even thoughts and feelings, in the form of daily schedules or diaries.

The observation of overt aspects of behavior has its limitations as well as its advantages. It frequently suggests more problems than it solves, thus having, at least, real value as an exploratory technic. Incidental observation is to be discouraged on the ground that it is too haphazard for scientific investigation and may be misleading in practical child study in so far as it directs attention to nontypical rather than to representative behavior. A limitation of even the more systematic type of observation is the increasing discrepancy, as the child grows older, between the observed behavior and its true meaning. There is need of new technics that will make possible the securing of information on nonobservable aspects of child behavior. Without such technics the tendency to interpret the child's overt responses in terms of adult psychology, and to make inferences regarding the thought

and emotional experience of the child, without recognizing them as *inferences*, is very strong.

Parents' Observation of Infants.—Although lacking in the precision and psychological insight necessary for research, parents' observations of infants may nevertheless have considerable accuracy and significance. First of all, they should be made systematically and repeatedly, instead of spasmodically and irregularly, as is the case with casual observation. Miss Shinn⁵ kept a complete, careful record of the development of her niece during the first year of life. She made observations day by day, not merely when some particular behavior attracted her attention. The parent or teacher, too, should observe a child during all periods of work or play, not only when he has done something annoying. Long ago, Herbert expressed this idea as follows:

Nothing is learned from one experience, and just as little from scattered observations; but one must repeat the experiment twenty times with twenty variations before a result is obtained, which even then opposing theories can explain each in its own way.⁶

In the second place, the observations should be immediately and carefully recorded. Often, ordinary observation is not immediately recorded, but is held in mind, becoming increasingly vague and worthless as time elapses. If attention is directed toward one particular kind of behavior and this behavior is observed for a short time at regular intervals,⁷ the parent may obtain valuable insight into the development of certain response tendencies. Careful scrutiny of a particular situation will give the mother cues, for example, as to why Mary is "stubborn." Over a period of time the mother can study the occasions on which Mary says "no" and "I won't," the parts that adults and children play in the total situation, and the treatment that appears to

⁵ Millicent W. Shinn, *The Biography of a Baby*. Boston: Houghton Mifflin Company, 1900.

⁶ Johann F. Herbart, *The Science of Education*. Translated by Henry M. and Emmie Felkin, p. 82. Boston: D. C. Heath and Company, 1892. Quoted by permission of the publisher.

⁷ W. C. Olson and Elizabeth M. Cunningham, "Time Sampling Techniques," *Child Development*, V (March, 1934), 41-58.

work. As the record of a child's behavior trends grows from day to day, the mother will get an illuminating picture of inconsistencies in her treatment, common recurring factors, unexpected changes, and improvement. Such a study would enable the mother to see more clearly the responses she should encourage, the environment experiences she ought to supply, and the effect on the child of her own and other persons' treatment of him.

A modern parents' "Baby Book" is no longer a stork-and-forget-me-not-decorated little volume interspersed with pretty poetry and spaces in which to paste a bit of the baby's hair, or a pattern of his first shoe. A modern "Baby Book" ⁸ is nothing more than a notebook of a utilitarian type filled with jottings such as:

April 3. Baby sat with very little support, grasped a bottle with her feet, enjoyed kicking feet in the air, and often used an alternate movement, said "chee-boo, moo," in response to talking

It might also include charts of physical, intellectual, social, and emotional growth, questions the parents should consider, and references of special value on different topics. The best way to learn about an individual child is to study him directly, taking into consideration the environmental forces which are influencing his course of development.

The most difficult aspects of child study are the recognition of significant kinds of behavior to observe and its interpretation. The skilled observer knows the kind of reactions that, under certain conditions, may be expected of children of a given stage of development. He notes the extent to which a particular child varies from the range of central tendency. He is thus better able to focus his attention on significant events, disregarding unimportant details. The method itself is inconsequential, it is the observer that is all-important. The adult should try to put himself in the child's world and view things as the child might, rather

⁸ See J. E. Anderson and Florence L. Goodenough, *The Modern Baby Book and Child Development Record from Birth to Sixteen Years*. New York: The Parents' Magazine and W. W. Norton and Company, 1931.

than to attempt to reconstruct from his own memories of early childhood the child's thought and intent

The study and appraisal of a child's development is an integral part of the guidance process. These two fundamental steps should be followed by providing in the environment the necessary experiences and training.

GUIDANCE OF MOTHER AND CHILD

At best, child guidance is essentially family guidance. In view of the high maternal mortality a more effective program of prenatal guidance of mothers is clearly indicated. Guidance of the mother, however, should not terminate as soon as the baby is born. In fact, the expert supervision of mother and child after birth is especially important for the baby's welfare. Evidence has been obtained of the satisfactory results obtained by the application of modern pediatric knowledge to groups of children under care in free clinics. A follow-up of a group of children, most of whom had been under supervision in clinics for infant welfare since birth, showed good health, low incidence of serious illness, low mortality, and absence of serious physical defects among them. Care counts.

The most dramatic example of successful postnatal guidance of infants is that of the five Dionne babies. It represents the quintessence of physical care. To this underprivileged family in the backwoods were brought the appliances of science needed to save babies' lives and to further their optimum of physical development. An air-conditioned incubator helped to mitigate the rigors of the world into which they had come two months too soon. Mothers' milk was obtained, boiled, and shipped by plane to them. The breath of life was artificially supplied to them by means of the Yandell Henderson oxygen-carbon-dioxide apparatus.

Quartz glass made accessible to them the ultraviolet rays of the spring and winter sun. They were protected from infection by taking the utmost precaution in sterilizing everything that came in contact with them and in requiring everyone who came near them to wear a surgical gown and

a mask. Sixty thousand dollars' worth of radium was brought to heal the tumor on Marie's thigh. And, finally, a nursery was built that was the last word in the scientific care of infants. As a demonstration of the efficacy of scientific knowledge, applied with courage and common sense, the quintuplets stand supreme in the history of the physical care of children. What was accomplished for the welfare of these children should be the right of all children.

QUESTIONS AND PROBLEMS

1. In what ways does scientific child study differ from ordinary observation of children?
2. Give several illustrations of significant, accurate observation of infants, and of vague, meaningless types of observation
3. Suggest a practical plan for a mother to use in recording observations of a baby during the first year
4. In what ways would your study of a child be unsatisfactory if you observed him only when he was annoying you?
5. What are the values of objective, accurate records of the development of individual children for the parents? For the advancement of knowledge of child development?
6. Keep a diary record of a baby for several consecutive days
7. Keep a record of progress in one specific phase of a baby's development.
8. List the items which you think are the most important to observe in a year-old baby and in a two-year-old child.

BIBLIOGRAPHY

BAYLEY, NANCY. "Mental Growth during the First Three Years: a Developmental Study of 61 Children by Repeated Tests," *Genetic Psychology Monographs*, Vol. XIV, No. 1 (1933), 1-92.

An important contribution to the research in mental development in infancy.

— *The Development of Motor Abilities during the First Three Years* Monographs of the Society for Research in Child Development, No. 1. Washington, D. C. Society for Research in Child Development, National Research Council, 1935. Pp. 26.

The results of serial measurement of motor abilities, using the California Infant Scale of Motor Development, of sixty-one children measured every month during the first fifteen months of

life and every three months thereafter through thirty-six months of age.

- BAYLEY, NANCY, and DAVIS, FRANK C. "Growth Changes in Bodily Size and Proportions during the First Three Years. A Developmental Study of Sixty-One Children by Repeated Measurements," *Biometrika*, XXVII (March, 1935), 26-87

An excellent scientific study of growth in length, weight, stem length, and body proportions during the first three years of life.

- BLATZ, WILLIAM E., and MILLICHAMP, DOROTHY A. *Development of Emotion in the Infant*. Toronto: University of Toronto Press, 1935. Pp. 44.

Results of an original investigation of emotional responses of infants from one to twenty-four months of age.

- BOTT, MRS. HELEN, and BLATZ, WILLIAM ERNEST. *Management of Young Children*. New York: William Morrow and Co., 1930. Pp. xli + 354

Practical suggestions based on a sound scientific basis of research and experience.

- BÜHLER, CHARLOTTE. *The First Year of Life*. Translated by Pearl Greenberg and Rowena Ripin. New York: John Day Co., 1930. Pp. x + 281.

A presentation of the procedures, methods, and conclusions of the laboratory work on development in infancy carried on in the "kinderubernahmsstelle der Gemeinde Wien"

- *From Birth to Maturity, An Outline of the Psychological Development of the Child*. London: Kegan Paul, Trench, Trubner and Co., 1935. Pp. xiv + 237.

An account of the results of child study in the Psychological Institute of Vienna and related investigations

- DENNIS, WAYNE. "A Bibliography of Baby Biographies," *Child Development*, VII (March, 1936), 71-73.

A list of sixty-four references to biographies of children in the first three years of life.

- FOSTER, JOSEPHINE CURTIS, and ANDERSON, JOHN E. *The Young Child and His Parents, A Study of One Hundred Cases*. Minneapolis, Minn.: University of Minnesota Press, 1930. Pp. 1 + 247.

A valuable case study approach to child guidance.

- GESELL, ARNOLD. *Infancy and Human Growth*. New York: The Macmillan Company, 1928. Pp. xvii + 418.

A valuable book, not only for the detailed characteristics of development during the first two years of life, but also for its background of theory and description of experimental methods of child study.

GESELL, ARNOLD *An Atlas of Infant Behavior* New Haven, Conn.: Yale University Press, 1934 Vol I and II

A pictorial presentation of development in infancy

GESELL, ARNOLD, and ILG, FRANCES L *Feeding Behavior of Infants* Philadelphia J. B. Lippincott and Co., 1937 Pp ix + 201

Part I deals with the development of ability, Part II, with developmental sequences, and Part III, with regulation, all showing feeding behavior as a part of the child's total development. "A pediatric approach to the mental hygiene of early life"

GESELL, ARNOLD, and THOMPSON, HELEN *Infant Behavior, Its Genesis and Growth.* New York McGraw-Hill Book Co., 1934. Pp. viii + 343

Results of intensive research on a pair of twins against the background of normative summaries.

GRUENBERG, SIDONIE M., and staff members of the Child Study Association of America *Parents' Questions.* New York Harper and Brothers, 1936 Pp xiv + 312

A classified group of parents' questions followed by well-considered answers to a number of specific questions

GRULEE, G. G., and BONAR, B. E. "The Newborn," in *Clinical Pediatrics*, Vol II. New York D Appleton-Century Company, 1927

A discussion on the physiology and care of the newborn child.

JANET, P. [*Intelligence before Language.*] Paris: Flammarion, 1936 Pp. 292

A discussion of intellectual operations in the early years—the concept of quantity; social relations involving the symbol and sign, command and obedience, and language, the beginnings of time, and the evolution of elementary intelligence

JOHNSON, HARRIET M *School Begins at Two.* New York. New Republic, Inc., 1936 Pp xxi + 224.

A highly practical, sane, and concrete consideration of the education of preschool children.

KOFFKA, KURT *The Growth of the Mind, An Introduction to Child-Psychology* Translated by Robert Morris Ogden New York. Harcourt, Brace and Co., 1928 Pp xix + 427

A gestalt psychology of infancy and childhood

LEWIS, M M *Infant Speech A Study of the Beginnings of Language.* New York: Harcourt, Brace and Co., 1936 Pp xii + 335.

A discussion of the development of language with emphasis upon its dynamic integral relation to the child's whole behavior

MCCARTHY, DOROTHEA "Language Development," in *A Handbook of Child Psychology* (second edition revised), Carl Murchison (Edi-

tor), pp 329-373 Worcester, Mass: Clark University Press, 1933.

A comprehensive summary of investigations on language development

MCGRAW, MYRTLE B *Growth A Study of Johnny and Jimmy*. Preface by F Tilney, introduction by J Dewey New York: D Appleton-Century Co, 1935 Pp xxi + 319

An extensive analysis of the development under different conditions of exercise, of Johnny and Jimmy, identical twins studied from birth to approximately two years of age.

— *Development of Reflexive and Adaptive Behavior Patterns in Infants* (Film) New York Normal Child Development Clinic, Columbia Medical Center, 1935 8 reels

A series of eight reels, each approximately 450 feet, showing the sequential development of particular behavior patterns in a pair of identical twins, Johnny and Jimmy.

PEARSON, WILFRED J, and WYLLIE, W G *Recent Advances in Diseases of Children* (third edition) Philadelphia: P. Blakiston's Son and Co, Inc, 1935 Pp 566

A concise outline of basic principles for attacking problems of diseases of childhood brought up to date.

PRUETTE, LORINE *The Parent and the Happy Child* New York: Henry Holt and Company, 1932 Pp 288.

A practical discussion written ostensibly for parents with emphasis on the psychology of family life as related to child development.

REYNOLDS, MARTHA MAY. *Negativism of Pre-School Children*. Teachers College Contributions to Education, No 288 New York: Teachers College, Columbia University, 1928 Pp. viii + 126.

A report of an experimental study of the reactions of 229 children, ranging in age from one year eleven months to five years six months, to requests to do certain things.

RICHARDSON, FRANK HOWARD *The Nervous Child and His Parents*. New York. G. P. Putnam's Sons, 1928. Pp ix + 400.

A discussion of the nervous child, what he does, some causes of his nervousness, and how parents may approach and solve the problems of the nervous child

RICKMAN, JOHN (Editor). *On the Bringing Up of Children*. London: Kegan Paul, 1936. Pp. xvi + 237.

A discussion of mental reaction of both parents and children during the developmental period by Susan Isaacs and four other psychoanalysts.

SHERBON, FLORENCE BROWN *The Child, Its Origin, Development and Care* New York McGraw-Hill Book Co, 1934 Pp xix + 707.

A rather idealistic presentation of principles and practice of care during pregnancy and birth

STODDARD, GEORGE D, and WELLMAN, BETH L *Child Psychology*. New York The Macmillan Company, 1934 Pp. xii + 419.

An excellent introduction to research in child psychology, accurate, critical, original, discriminating

STUART, HAROLD C *Healthy Childhood; Guidance for Physical Care*. New York D Appleton-Century Co, 1933 Pp xxvii + 393.

A practical book that deals in non-technical phraseology with the fundamentals determining child health.

WAGONER, LOVISA M *The Development of Learning in Young Children* New York McGraw-Hill Book Co., 1933. Pp. xiv + 322

A practical psychology of learning focused upon the problems of learning of young children.

— *Workbook for the Observation of Young Children* Yonkers-on-Hudson, New York. World Book Co, 1935

An excellent guide to parents' and teachers' observation of young children.

PART III

THE LATER PRESCHOOL PERIOD YEARS THREE, FOUR, AND FIVE

CHAPTER IX

DEVELOPMENT DURING THE LATER PRESCHOOL PERIOD

The child from two to six appears to play all day long. Yet his play may involve relatively more attention, skill, knowledge, and ingenuity than the work in which his father and mother engage. It is for him far more instructive.

During these four years the child leaves the helplessness of infancy far behind. He acquires the motor skills and co-ordination, the oral speech, and the social and emotional patterns that enable him, at the end of the preschool period, to hold his own in the relatively nonprotective environment of the elementary school.

The same questions that were asked with reference to the development of children in the earlier years are relevant to the later preschool period: What range of increase in height and weight may be expected during these years? What progress in motor development is made? What mental development takes place? Along what lines does the child's speech develop during these years? What are his relationships to other persons? What modification of early social and emotional patterns may be expected?

To answer these questions is a difficult task because of the increasing complexity of development. Some of the individual differences present in early infancy are reduced by training and by the demands of the surrounding culture. Other individual differences are accentuated, making the child a unique personality.

In order to understand the development of an individual child it is necessary to know his original endowment and his environment. *Environment* includes the reactions of parents and other persons to the child, his home and neighborhood conditions, his toys and daily schedule. One child, Thomas,

has good native ability which has not been stimulated by his environment. He is a mountain boy whose parents, ignorant of the physical and mental needs of young children, have given their son few educational advantages. Another boy, Donald, has the same native ability as Thomas. His parents, on the other hand, understand and can make provision for the needs of children. As a result, he develops more nearly to the limits of his native ability than Thomas. A third child, George, was born with limited ability. He is not so educable as the other two boys. He develops slowly. He walks and talks later than other children. He is slow to see relationships and to adapt himself to new situations.

There is no "average" child. Instead, we find children distributed with reference to any ability on a scale ranging from a very low to a very high degree of the ability. Relatively few fall exactly in the middle of the distribution; 50 per cent may fall within a fairly narrow range.

PHYSICAL GROWTH AND HEALTH

Height and Weight. — Growth in height and weight during the years from two to six is less rapid than it was in early infancy. An extension of the Woodbury tables of statures and weight of children under six years of age made by Grandprey¹ shows the range of variability. For example, at approximately two years of age the smallest 10 per cent of the boys were 31.5 inches tall and weighed 22.8 pounds; the largest 10 per cent were 35.6 inches tall and weighed 30.2 pounds. The variability in the height and weight of girls was similar. The figures for boys in the third, fourth, fifth, and sixth years are shown in the table on p. 155.

Evidence is accumulating which shows that height is not so important a determinant of variations in weight as are other skeletal measures, and that height and weight *per se* are not necessarily related to vitality and resistance to disease.

¹ Medora B. Grandprey, "Range of Variability in Weight and Height of Children under Six Years of Age," *Journal of Educational Psychology*, IV (March, 1933), 26-35.

AGE IN MONTHS *	WEIGHT IN POUNDS		HEIGHT IN INCHES	
	10 Per Centile	90 Per Centile	10 Per Centile	90 Per Centile
36.5	26.7	35.2	34.6	38.8
48.5	29.8	39.4	36.9	41.4
60.5	32.8	43.6	39.2	44.1
72.5	35.3	48.0	40.9	46.7

* This table is to be read as follows. At 36½ months of age 10 per cent of the boys weighed 26.7 pounds or less, while 10 per cent at the other end of the distribution with respect to size weighed 35.2 pounds or more, 10 per cent were 34.6 inches or less in height while 10 per cent were 38.8 inches or more.

Noticeable changes take place in body proportion ² These changes likewise show marked variability and almost complete overlapping of the distributions of a given measure, such as the transverse diameter of the thorax for one sex at successive ages.³

The head diameters of boys are, on the average, larger than those of girls at all ages from birth to five years ⁴ But, as in all other measures, great individual variation was found. The tendency for an increase in the cephalic index after the first month, varied from two points in one child to sixteen points in another.

Energy Requirement.— Basal metabolism represents the level of energy expenditure of an individual lying awake quietly without having eaten food for a number of hours. For a three-year-old child the basal metabolism was found to be forty-five to fifty calories per kilogram per day. The basal rate is slightly higher for boys than for girls. During quiet play Robb ⁵ found an increase in energy ex-

² Howard V. Meredith and George D. Stoddard, "Physical Growth from Birth to Maturity," *The Review of Educational Research*, VI (February, 1936), 54-84.

³ Howard V. Meredith and Virginia B. Knott, "Changes in Body Proportions during Infancy and the Preschool Years I. The Thoracic Index," *Child Development*, VIII (June, 1937), 181-183.

⁴ Nancy Bayley, "Growth Changes in the Cephalic Index during the First Five Years of Life," *Human Biology*, VIII (February, 1936), 1-18.

⁵ Elda Robb, *The Energy Requirement of Normal Three- and Four-Year-Old Children under Standard Basal Metabolism Conditions and during Periods of Quiet Play* Child Development Monographs, No. 16 New York: Teachers College, Columbia University, 1934.

penditure over basal values of 66 per cent for girls and 69 per cent for boys

The basal metabolism figures reported by Robb and also by several other investigators for normal children three and four years old are higher than those obtained earlier by Benedict — from about 850 to 900 calories for girls and from 875 to 950 calories for boys or even higher. To this basal figure should be added the extra expenditure due to activity. During periods of quiet play this additional expenditure

was found to average 36 calories per kilogram per hour for the girls and 40 for the boys⁶

The energy used by three-year-old children during a period of quiet play is about 75 per cent higher than their basal energy expenditure. The actual daily calorie intake of pre-school children varies with their size and activity around 1,300 to 1,400 calories.

Teeth. — The last of the baby's first teeth, the second temporary molars, should push through the gums about the age of two years, six months. These teeth find the gums very resistant and more often cause "teething trouble" than the teeth that have already appeared. At the age of three most children have their complete set of temporary teeth, ten on each jaw.

Resistance to Disease. — The most outstanding causes of illness in almost nine thousand families in the United States were respiratory diseases.⁷ Illness, in general, was found to be most frequent under five years of age; least frequent at fifteen to nineteen years of age. The peak of diphtheria occurs at about the two-year level.

Among the most important clinical findings that may indicate functional disturbances are loss in weight, a slight elevation of temperature, physiologic heart murmur, a slight decrease in hemoglobin, functional albuminuria, and a positive tuberculin reaction.⁸ While these clinical evidences

⁶ *Ibid.*, p. 53.

⁷ S. D. Collins, "The Incidence and Causes of Illness at Specific Ages," *Milbank Memorial Fund Quarterly*, XIII (October, 1935), 320-338

⁸ H. A. Slesinger, "Clinical Findings in Functional Disturbances during Childhood," *Archives of Pediatrics*, LI (August, 1931), 534-537

should be discovered and considered by the physician, they should not be used to make hypochondriacs of the children. It is all too easy for parents to give children an invalid complex if they show signs of some of the more serious functional disorders.

Sleep — Sleep habits are an evidence or a cause of good or poor adjustment in general. They are fundamental habits in young children. For children from two to four years old twelve to fourteen hours of sleep are generally recommended; for children from four to six, eleven to thirteen hours. These amounts of sleep recommended by authorities, however, appear to be higher than the actual sleeping hours of certain groups of children. Pediatricians may be wrong in the amounts they recommend. Variations in the number of hours a child sleeps from day to day are large, but variations from week to week small, suggesting a tendency for the organism to maintain a sleep balance over a longer period of time than twenty-four hours. There is need for a study of sleep in relationship to the child's physical condition and other factors.

The following average number of sleeping hours for children three to six years of age have been reported:

REPORTED BY	2-3 YEARS	3-4 YEARS	4-5 YEARS	5-6 YEARS
Faegre and Anderson *	12.7	12.1	11.7	11.3
Thompson †	15.4	14.4	13.5	
Bott <i>et al</i> ‡	12.8	12.8	12.0	11.5
Reynolds and Mallay §	12.5	11.4	10.9	

* Marion L. Faegre and John E. Anderson, *Child Care and Training* (fourth edition), p. 144. Minneapolis: University of Minnesota Press, 1937.

† Helen Thompson, "Sleep Requirements during Infancy," *Psychological Monographs*, XLVII, No. 2 (1936), 64-73.

‡ E. A. Bott, W. E. Blatz, N. Chant, and H. Bott, "Observation and Training of the Fundamental Habits in Young Children," *Genetic Psychology Monographs*, IV (July, 1928), 1-162.

§ Martha May Reynolds and Helena Mallay, "The Sleep of Young Children," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLIII (December, 1933), 322-351.

The actual time asleep is probably somewhat less than the reported figures, as bedtime does not always coincide with

sleeptime. Many children do not go to sleep at night for an hour after they go to bed. They may normally be expected to lie awake about twenty minutes.

Sleeping during the day diminishes during the preschool years. At two years of age practically all of the children studied took naps during the day, while, during the fourth years, the number was reduced to half. There are without doubt differences in the amount of sleep required by different children. A young Edison may actually need less sleep than another child. In the case of the majority of children, however, fatigue, irritability, and loss of appetite may appear when the child is not getting sufficient sleep.

Among the conditions conducive to the formation of proper sleep habits are regularity of bedtime, a well-balanced day, and an environment favorable to sleep.

MOTOR ABILITIES

Motor development is intimately related to the child's whole personality. It cannot be measured without involving elements of intellectual comprehension and attention. Certain motor skills have been shown to be related to social adjustment. Individual differences in muscular activity may have certain basic relationships to personality.

During the years from two to six children make marked progress in speed, in accuracy, and in strength of muscular activities. This progress is shown both in the large-muscle activities and in the finer co-ordinations.

Large-Muscle Activities. — The abilities to walk, run, and climb which were acquired in the second year are improved during the later preschool period. Four-year-olds walk more steadily, run more quickly, and climb in higher and more difficult places than they did two years earlier. They have fewer falls. They get fewer bumps. They run for a purpose more often than they "just run." They can walk and run longer distances. The hardest thing for them to do is be inactive. To have to sit still is more fatiguing than trotting about as they please all morning. They are more likely to "get tired sitting still" than to "get tired."



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CECILE, EMILIE, ANNETTE, MARIE, AND YVONNE DIONNE

They begin jumping rope between five and six years. They gain skill in balancing themselves on rails, the top of a wall, a narrow plank elevated at one end, or a tape or chalk mark on the floor of the barn, garage, or nursery. Sufficient balance to use roller skates with four wheels, but not ice skates with a single runner, can be expected. A five-year-old may ignore the bicycle which would delight him at six years when he had achieved better balance.

The sense of rhythm develops in children during these years. They learn to keep time to music, to beat time with their hand, and to walk and skip to music. Rather fast tempos appear to be easier for them to follow than slower tempos.⁹ The ability to rhythmize appears to be related to both motor co-ordination and intelligence and to be

subject to improvement through specific and general training, no matter what the initial level of ability may be¹⁰

Finer Co-ordinations. — An especially joyful occupation of two- and three-year-olds is driving nails. One little girl of three years was discovered by her mother driving large nails into the side of the house with quite remarkable accuracy of aim and infinite satisfaction. She was equally content to drive them into a wooden block which her mother provided, with the welfare of both the child and the house in mind. By the sixth year children become interested in using their skill in carpentry in the making of a table, a wagon, or a boat. To be sure, these articles are crude, but they represent greater educational value than beautiful tables or wagons or boats which they might have watched their fathers make.

Finer motor co-ordination is also shown by the increased ability to carry a glass or pitcher of milk to the table without spilling it, to build more elaborate towers with blocks,

⁹ Arthur T. Jersild and S. F. Bienstock, *Development of Rhythm in Young Children*. Child Development Monographs, No. 22. New York: Teachers College, Columbia University, 1935.

¹⁰ Minne G. Wright, "The Effect of Training on Rhythmic Ability and Other Problems Related to Rhythm," *Child Development*, VIII (June, 1937), 159-172.

to button clothes, and to use the scissors in following roughly the outline of pictures. Gesell found 85 to 100 per cent of the five-year-old children able to "fold paper diagonally," "to copy a square," and to trace around one of two diamonds drawn on paper; 65 to 84 per cent could draw a triangle, a diagonal, a "recognizable picture of a man," could put away toys neatly in a box, and could "wash himself without getting his clothes very wet." "Lacing shoes is characteristic of the four-year level"

Certain kinds of manipulative play material require originality as well as motor co-ordination. An example of this kind of material is a board with holes in it into which are fitted colored marbles. Wagoner¹¹ found that boys four years old made an average of 5.9 original designs with the colored marbles; girls four years old, 7.5; boys five years old, 11.2; and girls five years old, 10.1 in a given period of time. Between two and five years of age children show improvement in their ability to plan and to execute a block design. As they grow older, they tend to place the blocks more carefully and to make the designs more symmetrical.

Many preschool children learn to write their names. Below the age of three the typical response of a group of 170 superior preschool children was a meaningless scrawl, representing the zero level in name writing.¹² At a slightly more advanced age level there was an imitation of the adult's manner expressed in a hasty up-and-down scribbling across the page. At about four years of age the children showed an interest in forming letter symbols, and after five showed ability to write their first name with increasing interest, care, speed, and skill as they grew older. Toward the end of the sixth year most of the children tested could write their last name as well as their first name.

Variations and overlapping of abilities in individual and group achievement were noticeable, caused in part by differ-

¹¹ Lovisa C. Wagoner, *The Constructive Ability of Young Children* Studies in Child Welfare, Vol. III, No. 2, p. 21. Iowa City, Iowa: University of Iowa, 1925.

¹² Gertrude Hildreth, "Developmental Sequences in Name Writing," *Child Development*, VII (December, 1936), 291-303.

ences in training According to parents' reports, children at certain stages of maturity showed a readiness for writing. They wanted to imitate adults' writing activities, and set to work, frequently spending hours in writing, without much instruction from parents or nurses. As children grew older, they tended to demand more assistance from adults.

Helpful Activities. — As a result of patient, skilful instruction the older preschool child should be a genuine help in the home, first of all by learning gradually to take care of himself. He can brush his teeth, dress himself, except for tying his shoe laces and fastening some especially difficult buttons, and take responsibility for bowel and bladder control. In numerous other ways he can help his mother, though she must still patiently supervise, instruct, and audibly approve his activities. Cleaning the bathroom, for example, may be made a pleasant form of water play. Wearing a rubber apron he can clean the faucets with soapsuds and rub them shiny with a dry cloth. Powders and oils should be avoided because they are so difficult for little children to use. Mirrors are delightful to clean. Correct cleaning methods should be taught from the beginning so that the child will know which cloths or brushes to use and where to put them when the cleaning task is finished. In the living room there are magazines and books to arrange neatly and plants to water. In the dining room there is the table to be set three times a day and sometimes flowers to arrange.

In the kitchen there may be a little piece of dough to knead or cookies to cut out with a thimble. There are dishes to dry, potatoes to scrub clean for baking, lettuce and spinach to wash leaf by leaf, and scraps to carry to the chickens. The mother should help the child to find the fun in all these little tasks and make him feel that he has really helped her and made his contribution to the family life. Children like useful activities as well as, or better than, useless ones, provided these activities are suited to their capacity. Care should be taken that there is nothing in the mother's or teacher's manner to arouse antagonism to the task. With preschool children the activity of cleaning can

be carried on with considerable efficiency and at the same time in the play spirit. Sometimes mothers complain that their older daughters will not help them with the housework. One reason for lack of helpfulness in later childhood may be that no opportunities to help were given to the little child when he was eager to do what mother was doing. "The child's more trouble than he is worth," the mother says. And, indeed, it is true that while the child is learning a task, the mother could do it more quickly and easily herself, but she must consider the value of the activity in the child's experience rather than her own convenience, whenever possible. There is evidence that sharing in these household tasks in the happy, eager way suggested helps to build habits of co-operation and of being at ease with adults. When there are a number of children in the family, each child's interests and preferences should be studied and some choice of the most appealing and appropriate activities allowed.

A low relationship has usually been reported between specific motor abilities and mental abilities. The relationship, however, may be somewhat higher with subnormal children than with the entire population of children.

Play Activities. — Many children seem to follow a general pattern of play. At two years of age they "hustle things around" — handle them, take them apart and put them together, pick them up and put them down, and the like. At three years of age the beginning of construction and design are seen in the matrix of manipulative activity. Dolls, clay, paints, hollow blocks, and wagons are still popular. More definite building and designing with crayons and blocks is evident at four years of age. The five-year-old becomes quite skilful in construction and enjoys dramatic play. This is, to be sure, a general outline which varies with individual children in different environments. Each child should be encouraged to progress in his play activities but should not be pushed beyond his present level of development.

It has generally been assumed that the play of boys is more vigorous than that of girls. There is evidence that boys tend to choose materials which make for active play while girls

tend to prefer those which encourage more passive play. Nevertheless, the actual vigorousness of the girls may be as great as that of the boys. Fales' ¹³ study of thirty-two preschool boys and girls showed them to be strikingly similar, on the average, in the vigorousness of their activities. There were wide individual differences, especially among the girls. The most passive and the most active children in the entire group were girls.

LANGUAGE

Development of Language in Preschool Children. — Language develops in response to needs. From two to five years of age speech rapidly progresses from single words — nouns, verbs, adverbs, adjectives, and prepositions — to single-word sentences, non-verb sentences, short sentences of three to five words, complete sentences of six to eight words, and real conversation. Personal pronouns, relative pronouns, and subordinating and connecting words are usually acquired relatively late. Baby talk, or infantile pronunciation, should be a thing of the past by the fifth year. The amount of incomprehensible speech and incomplete sentences decreases; the length of sentences and the proportion of complex sentences increases.¹⁴ Sentences increase in length, on the average, from 1.7 words at two years of age to 4.7 words at four and a half years. Complete sentences increase with age. Compound and complex sentences appear in the conversation of children by the end of the third year. Sentences, such as "I'll come in when you call me," and "May I go to Mary if she is home?" should not call forth astonishment when occasionally used by three-year-old children. Simple sentences, however, are the most common form at all preschool ages. During the fifth year compound and complex sentences constitute only about 2 and 5 per cent respectively, of the total number of sentences.

¹³ Evaline Fales, "A Comparison of the Vigorousness of Play Activities of Preschool Boys and Girls," *Child Development*, VIII (June, 1937), 144-158.

¹⁴ Mary S. Fisher, *Language Patterns of Preschool Children*. Child Development Monographs, No. 15. New York: Teachers College, Columbia University, 1934.

At first children's conversation is concerned more frequently with things than with people. By six years of age, in free play situations, the percentage of socialized speech in which the child exchanges thought with others, considers their point of view, or tries to influence them is far larger than the percentage of egocentric speech in which the child talks without caring very much who listens and without trying to get his companion's point of view. Children as young as three years, however, have seemed to be able to get another person's point of view. The differences in results of investigations on this question may be due to differences in the adult's interpretation of the child's response as well as to differences in his environment. Language tends to become progressively more social as children grow older. During the entire period *I* is a frequently recurring word. One study¹⁵ of the language development of 273 children varying in age from eight months to six years shows vividly the naive interest of children in themselves. *I* occurred 2,543 times in 124 one-hour conversations and *my*, *me*, *mine*, and *we* were used from 569 to 170 times. Although the personal pronouns are used so extensively during these years, the little child may really understand other persons better than he understands himself.

The innumerable questions children ask between the ages of three and six both use and improve their language ability. *What* and *where* questions tend to precede *how*, *when*, and *why* questions. The interminable inquiries of preschool children nearly drive parents to distraction. The child's response to almost any statement is likely to be a question. One parent of a four-year-old child said to him when he started to climb up on one of the living room chairs, "Teddy, *your* chair is to climb on, but grown-up chairs will get scratched or break." This simple statement of fact evoked a veritable avalanche of questions. "Then what will you have to do?" "Why can't you fix it yourself?" "Will it

¹⁵ Madorah E. Smith, *An Investigation of the Development of the Sentence and the Extent of Vocabulary in Young Children*. University of Iowa Studies in Child Welfare, Vol. III, No. 5, p. 54. Iowa City, Iowa: University of Iowa, 1926.

cost a lot?" "If you have to pay for it, what else can't you get?" And so on. The impetus to such questions seems to be, in part, the activity of an inquiring mind and, in part, sheer sociability. When the question is a genuine attempt to run down the solution of a problem or quickly to get information about some perplexing things in his environment, the child seems pleased to hear the answer and considers it before he goes on to the next question. When his purpose is to confirm his own opinion, the questions are fired more rapidly and a brief answer suffices. When the motivation is primarily social, the questions are more or less idle and the answers frequently already known to him.

The most common errors made in the spontaneous conversations of preschool children are the omission of an essential word and errors in the use of a verb.¹⁶ Irregular verbs give a great deal of trouble. The preschool child is often more consistent in his rules of grammar than the English language is. He tends to make unfamiliar verbs and nouns form their past tenses and plurals regularly. One four-year-old saw the wind pick up a piece of newspaper and carry it away. "Fled away," said he. Many errors are due to unwarranted generalization. Joan, on her third birthday, was bought a doll buggy. When it came, her mother said, "See, Joan, it's your birthday." In a few minutes Joan said, "I want to wash my birthday," and began on the hood at once.

Language ability is required to pass the new Stanford Revision of the Binet Test at the three-, four-, and five-year levels.¹⁷ Three-year-olds are expected to name correctly the pictures of common objects shown to them, to obey simple commands; to talk about a picture shown to them; to answer questions involving a simple cause and effect relationship. In addition to these items which are predominantly concerned with language ability the entire test requires a comprehension of spoken words. The same types of language

¹⁶ Madorah E. Smith, "Grammatical Errors in the Speech of Preschool Children," *Child Development*, IV (June, 1933), 183-190.

¹⁷ Lewis M. Terman and Maud A. Merrill, *Measuring Intelligence*, pp. 80-94. Boston: Houghton Mifflin Company, 1937.

ability on a slightly more advanced level are required for success on the four- and the five-year tests

Vocabularies.—A child's knowledge of words varies in quality as well as quantity. The meaning of some words has grown out of firsthand experience and is vivid and precise; the meaning of other words is vague or incorrect. Between these two extremes are all degrees of word knowledge. Accordingly, a distinction should be made between the number of words a child understands and the number he uses.

The number of words a child uses varies greatly with his intelligence and with the opportunities for language development in his environment. Van Alstyne found, in the case of three-year-old children, that environmental factors correlated

consistently higher with the results of the vocabulary test than with intelligence test results.¹⁸

It is impossible to predict reliably the vocabulary of an individual child.

An average estimate of vocabulary is about nine hundred words at three years of age, about fifteen hundred words at four years, and about two thousand at five years. In one recent study of vocabulary¹⁹ a dictaphone was used to record in permanent and accurate form the words used by a five-year-old child.

Children differ greatly in their language ability at the end of the fifth year. Some still use only very simple words and sentences. Others converse as fluently as many adults. The great statesman, Mirabeau, wrote the following composition when he was five and a half years old:

Monsieur de Mirabeau: I beg you to pay attention to your writing and not to make blots on your copybook, to take notice of what is done, to obey your master, your father, your mother, not to be obstinate; no evasions; honor above everything, attack nobody

¹⁸ Dorothy Van Alstyne, *The Environment of Three-Year-Old Children; Factors Related to Intelligence and Vocabulary Tests*. New York: Teachers College, Columbia University, 1929

¹⁹ R. S. Uhrbrock, "Words Most Frequently Used by a Five-Year-Old Girl," *The Journal of Educational Psychology*, XXVII (February, 1936), 155-158

unless you are attacked yourself; defend your country, be not disagreeable to servants nor be familiar with them, conceal the faults of your neighbors because that may happen to you yourself.

Certainly he was a very fluent young politician.

Girls, on the whole, appear to excel boys in early language development. They have a larger vocabulary; they begin to use longer and more complex sentences earlier than boys; they ask more questions about names and places and social rules. At the age of two, but not consistently thereafter, girls were found to make fewer grammatical errors than boys, and to have a smaller percentage of speech disorders. After six years of age the language superiority of girls is not so evident. In fact, several reports show that boys exceed girls in extent of total vocabulary after the age of six or seven years.

MENTAL DEVELOPMENT

Understanding, judgment, insight, intellect, and the intelligence . . . the well that supplies these sovereign waters is at the world's end where the fairies that attend a child's cradle reside. We can do much by use and practice, but cannot, it seems, increase our own private supply.²⁰

Intelligent behavior, as the above quotation suggests, implies first of all an inherited nervous structure. The quality of brain and nerves and the muscular mechanism of response are the basis of intelligent behavior. More specific aspects are the ability to perceive relationships, to remember, and to mobilize one's mental energy in solving particular problems.

Children's Concepts. — Preschool children's ideas of the world of man and nature grow as they gain increasing ability to perceive relationships between things and acts, antecedents and consequences of events. It is difficult to study the concepts of young children because they may exist in the child's mind un verbalized, or in different degrees of perfection, or in a form quite different from the meaning

²⁰ Walter de la Mare, *Early One Morning in the Spring*, p. 40. New York: The Macmillan Company, 1935

attached to them by adults. Yet they are the materials of reasoning.

It is not entirely clear whether children three to six years of age get more meaning from their total or general impression than from an analytical approach to the situation. Under controlled conditions, a small group of children, varying in age from three to five years, perceived familiar forms such as a chair, horse, candle, etc., about as quickly and correctly when the pictures were shown upside down or in a left-right reversed position as when they were presented in their correct position.²¹ Under the conditions of this experiment spatial orientation does not appear to be necessary for identification of familiar visual forms.

Seeing Relationships — Reasoning and judgment are called for in adapting to new situations. Ability to discriminate form comes before ability to see relationships. Children three to five years of age show an increasing ability to put parts of a picture puzzle together, to match various forms, to distinguish two boxes of different weights and two lines of different lengths. The revised Stanford-Binet scale includes a test of discrimination of forms on the four-year level and, at four and a half years, a definite test of ability to express certain relationships verbally. When children of different ages were shown three boxes of different sizes, the two-year-olds could not distinguish the middle-sized box from the others. Some of the three-year-olds could do this and still more of the four-year-old children were successful. Little children seem to be more influenced by the position of an object than by its size. They recognize place before they seem to be aware of distance. During the third to the sixth year children learn to discriminate with regard to distances. Gesell found that 65 to 84 per cent of five-year-old children could tell whether a three- or a fifteen-gram weight was the heavier, and which of two faces was the prettier. They could also put together correctly the two pieces of a rectangle. Thirty per cent of the four-year-olds were suc-

²¹ Sidney M. Newhall, "Identification by Young Children of Differently Oriented Visual Forms," *Child Development*, VIII (March, 1937), 105-111.

cessful at the same task. Success with the form-board type of test requires both motor co-ordination and ability to see relationships. Speed, too, is a factor in some cases. Children two years of age fail on form boards with eight different forms but succeed on less complex boards having only four forms.

Primitive children of the Manus tribe did not appear to follow a pattern that has commonly been believed to represent a primitive process of thought.²² They showed a negative rather than a positive tendency to endow everything with intentions and a personality. Piaget's evidences of animism in the children whom he studied may be the result of the education and culture in which that particular group grew up rather than a fundamental stage in the development of children's thinking.

Children have to think whenever they want something they cannot get. When constructive activity is well under way, difficulties arise which demand thought. For example, if a child's play house built of boxes tumbles down, he must invent a more secure way of placing them. If the tower he is building grows beyond his reach, he must devise some means of climbing up on a chair or a box placed on a chair in order to add more blocks to the edifice. A problem in which the child is interested is essential in order to stimulate and direct thought. Children should be allowed to handle many of the natural problems which parents and teachers often settle for them. If children are permitted to do things for themselves, rather than being pampered and waited on hand and foot, they will find plenty of problems and will have to think in order to solve them. A child who loses a ball under a piano may finally succeed in pushing it out with a stick after he has tried unsuccessfully to get his arm underneath the piano or to throw small objects after the ball. Guidance in reasoning, at its best, consists in setting up a situation in which the child can control his

²² Margaret Mead, "An Investigation of the Thought of Primitive Children: with Special Reference to Animism: Preliminary Report," *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, LXII (January-June, 1932), 173-190.

actions and the environment sufficiently to solve the many daily problems that are real and important to him.

Cause and effect relationships are discovered in a number of ways. Building and other types of construction furnish certain opportunities. For example, a four-year-old was building a house of boxes which the wind blew down. He showed appreciation of cause and effect when he said, "If the wind blows it over again, will we have to stop building?" Much of the thinking of preschool children consists in seeing that a certain situation produces a certain result, that certain people have certain relationships to them, and that certain objects are used in characteristic ways. A four-year-old boy in a swing saw that a wagon was in the way. If he swung higher, he would hit it. When he saw the relationship between the wagon and the swing, he pushed the wagon away. A child two years six months old, seeing his father picking peas, said, "Tom away?" Tom was the gardener who usually brought in the vegetables. The child may have reached the conclusion that because his father was doing this work the gardener was away. "What's it for?" is always on the tip of the four-year-old's tongue. He not only wants to know what this table and that boat are for, but what "that old man" and "that little girl" are for.

Faulty reasoning is due to lack of experience rather than to lack of development of the sense organs, since touch, taste, sight, hearing, and seeing are almost as keen as they ever will be. Examples of erroneous reasoning are frequently observed. Tiedemann reports that his child of two years and nine months said one evening when he no longer saw the sun in the sky, "The sun has gone to bed; tomorrow he will get up again, drink his tea, and eat his bread and butter." A more mature type of reasoning was shown by a boy four years old who said, "Well, when I am grown-up, I won't live here any more. I'll have to go down town and live with the other grown-up mens." Another time when his mother told him that there were some poor children who could not take baths so easily, he said, "Where are they? Are they in the country? Well, then, you drive out there

and I'll take my two banks [containing thirty-seven cents in all] and give them the money and then they can buy tubs for themselves" Errors in judgments are common among preschool children Their ability to make simple generalizations, however, is frequently underestimated Their failure to make more accurate generalizations is, in part, the result of their illogical environment

In these early years one should not attempt to develop reasoning by giving the child long and complicated answers to his simple questions. In doing this there is danger of developing a glibness and superficiality that leaves undeveloped the child's own ability to generalize on experience. As a result he possesses empty words that are of slight use to him in meeting new situations Verbal explanations given to the child are a sort of short-circuiting that cuts the child off from a natural approach to problems, to finding solutions for himself and checking back to see whether his solution works. One youngster who had a great desire to investigate everything discovered some dry ice in which ice cream had been packed His mother said she was glad he had not touched it He said soberly, "Well, I did touch it a little teeny bit, and it gave me a little shock so I left it alone." Excellent learning from experience!

To summarize: Children's thinking may be encouraged by

1. Giving them time to think — not hurrying them in their decisions.
2. Giving them occasion to think — not solving their natural problems for them.
3. Setting the stage for success in solving their problems — not putting them in situations in which they will get into hot water whenever they experiment, or subjecting them to too difficult artificial laboratory type experiments
4. Encouraging them to plan their work and play

There is great variability in the thinking processes of young children. They do not gain their insights in any one way.

Attention.—To discover relationships some degree of sustained attention is necessary. The amount of time a child will spontaneously attend to a particular thing, in general, increases with age. Miles²³ found that children of three and four years would wait attentively eight seconds for a jack-in-the-box to open; five-year-old children did not look away until 16.8 seconds; six-year-olds, 27.5 seconds. Van Alstyne²⁴ observed that two-year-old children played at a given activity only six to seven minutes while five-year-olds maintained their interest in one kind of play about twice as long. Individual children varied in the length of their attention span from one to forty-five minutes. In another situation the average duration of attention of 417 Australian children increased from approximately seven minutes at two years of age to twenty-four minutes at six years.²⁵ Clay, dolls, blocks, crayons, and puzzles hold the attention of five-year-olds for the longest time. In general, preschool children may be expected to sustain attention from seven to twenty minutes, according to their maturity and the complexity of the task. The cultural pattern may also enter in as a factor.

Memory.—The ability to take in impressions is a prerequisite to the retention of them. Both are obviously necessary to seeing relationships and, in general, to intelligent behavior. These abilities increase with age. The memory span of a two-year-old child, under certain experimental conditions, may be twenty minutes as compared to twelve seconds at the end of the first year. Children, not quite a year old, taught to squeeze a rubber ball so that a bird would come out, did not remember what they had learned for more than a minute, while children about a year and a half old retained this impression over a fifteen-minute interval. The

²³ Katherine A. Miles, "Sustained Visual Fixation of Preschool Children to a Delayed Stimulus," *Child Development*, IV (March, 1933), 1-5.

²⁴ Dorothy Van Alstyne, *Play Behavior and Choice of Play Materials of Preschool Children*. Chicago: University of Chicago Press, 1932.

²⁵ M. V. Gutteridge, *The Duration of Attention in Young Children, Illustrated*. Educational Research Series No. 41. Melbourne: Melbourne University Press, 1935.

length of the latent memory span of another group of preschool children was found to range from 0.3 of a day to 19.8 days, varying with the methods used by the experimenter, the type of task, the age and the personality of the child.²⁶ When twenty objects in a box were shown for a few minutes to preschool children and to adults, it was found that the children remembered, on the average, approximately two objects, while adults had remembered six.

A number of the items in intelligence tests for children of these ages specifically test memory. The Stanford-Binet test,²⁷ at its early levels, is primarily a memory test. It includes the following measures of memory, tied up, to be sure, with verbal ability and comprehension. At three years the child is shown an animal picture and asked "What is this?" The child names the picture, or is told the correct name. Then the card is taken away and the child is asked to find the first shown picture on another card. A more difficult form of the same type of test, namely, showing three objects and hiding one of them in order to see whether the child recalls the one that is missing, is included among the tests at the four-year level. Repeating three digits at three years, and four digits at four years and six months are tests of memory for numbers. Repeating a sentence of approximately twelve syllables is a test of memory for words. The sentences for five-year-olds are one word longer. The tests of obeying simple commands involve keeping the directions in mind as well as initial comprehension of them. Children of four and a half years can keep in mind long enough to carry out, correctly and in proper order, directions involving three separate commands.

Measured Intelligence — A six-month-old baby who appears to be bright as measured by the mental tests for that age may not be rated the same by the tests given two to three years later. In other words, it is difficult to make an accurate prediction of a child's future intelligence from tests

²⁶ Helena Mallay, "The Latent Memory Span of the Preschool Child," *Child Development*, VI (June, 1935), 110-119.

²⁷ *Measuring Intelligence*, *op. cit.*, pp. 80-94.

given in early infancy. This discrepancy in test results is due, in part, to the fact that the standardized tests for the first year do not measure the same abilities as tests for older children. The early tests are predominantly measures of motor ability, while the tests for older children increasingly require the intelligent use of words and more of the kind of knowledge commonly acquired in school.

Accordingly, schooling may be expected to affect somewhat the results of intelligence tests. Evidence that this is true is accumulating. Wellman,²⁸ in a significant study of the effect of nursery school attendance on the intelligence quotient, found that the children gained significantly in intelligence quotient during the time when they were in preschool. They made further gains in a progressive elementary school. Three children who tested average on entrance to preschool tested above the 90 percentile on two college tests of intelligence. Those who reverse the I.Q. question the significance of these findings. Their skepticism is based on the supposition that a factor of selection may have entered in and that the tests used may have been particularly liable to environmental influences. One should like to believe, however, that the functioning of a child's intelligence is affected by his environment during the first five years of life. The increase in intelligence test scores apparently resulting from long attendance at superior schools suggests that the ordinary school does not develop the mental ability which many children possess.

The tests at the later preschool ages appear to give as adequate a basis for prognosis as do the tests given in the primary grades. Intelligence tests given at three to five years have been found to give a good indication of future percentile rank on a standardized intelligence test at the senior high-school level, provided certain environmental conditions are kept constant. During the preschool period the children who originally appeared to be less bright made the largest gains in intelligence quotients, but all groups gained,

²⁸ Beth L. Wellman, "Mental Growth from Preschool to College," *The Journal of Experimental Education* (December, 1937), 127-138

on the average, from five to seven points. Children having parents with more years of education and of higher occupational levels, although of initially higher I Q. than children of lower cultural status, did not make significantly larger gains in I Q. "The amount of gain made was contingent upon the intelligence level attained when the child began his preschool career, irrespective of his cultural status" ²⁹

Functioning Intelligence. — Whether the native ability a child possesses actually manifests itself in intelligent behavior depends upon a number of conditions within the child and in the environment. Illness, fatigue, glandular deficiency, or overfunctioning, may affect mental activity. An environment which demands ingenuity of the child within his own range of control is, as has already been suggested, an important means of encouraging the full use of his mental ability during the preschool years.

Make-Believe and Dramatization. — One expression of a child's mental activity is his make-believe and dramatization.³⁰ Between the ages of two and five years one can learn most about children's fancies and make-believe by observing them and listening to what they say during their free play or when they are lying down before going to sleep. Observation should be supplemented by the use of test situations and conversation with the child. No one method will give an adequate picture of a child's imaginative life ³¹

Individual differences among children within a single group are marked. These may be caused in part by differences in the children's education. In some homes and nursery schools make-believe is encouraged, while in others the tendency toward flights of fancy is suppressed.

Below the age of five years creative imagination is likely

²⁹ H. S. Coffey and Beth L. Wellman, "Role of Cultural Status in Intelligence Changes of Preschool Children," *The Journal of Experimental Education*, V (December, 1936), 191-202.

³⁰ R. Griffiths, *The Study of Imagination in Early Childhood and Its Function in Mental Development*. London: Kegan Paul, 1935.

³¹ Frances V. Markey, *Imaginative Behavior of Preschool Children*. Child Development Monographs No. 18. New York: Teachers College, Columbia University, 1935.

to be expressed in constructive activities. Children of this age make a play house and equip it with imaginary electric lights. They draw pictures that mean more to them than to anyone else.

Imaginary playmates are sometimes very real with children three years of age and older. From one-tenth to one-third of the children in various investigations reported having had an imaginary playmate. Children who are leaders as well as children with personality difficulties, boys as well as girls, bright children even more than dull ones, experience these phenomena of fancy.

A child's make-believe sometimes gives cues to his social and emotional adjustments. For example, children who had younger brothers or sisters tended to reveal jealousy and sibling rivalry in a play situation in which dolls represented a mother, a baby, and a little sister or brother. Such play responses are difficult to appraise. The examiner's interpretation in terms of his own psychology enters in as well as the child's dramatization of the situation on the funny paper level. Some children spank their dolls and shut them up in closets in perfect good nature.

The majority of preschool children enjoy dramatization of many kinds. They walk like big sister, go on all fours and growl like a bear, whistle and toot and rush through the room like an engine, make-believe read the newspaper like father, and play they are telephoning. One four-year-old flung open the door of the nursery and announced excitedly, "Dr. C. [the family physician] is here." When his mother saw no evidence of the doctor's arrival, she said, "How do you know Dr. C. is here?" At once he grinned broadly and shouted, "Because I'm him." Then he produced a flashlight and a pair of pincers to use for a stethoscope, and a pencil for a tongue depressor, all of which he had collected in a pasteboard box. They also like to dramatize very simple stories. There seems to be a period, somewhere between five and seven years, while the actual world is no longer new and strange to them and before they become

matter-of-fact, when fairy tales add new delights to living for the imaginative child.

Imagery — Eidetic images might be described as photographic memory. A person with eidetic imagery, after having looked attentively at an object is able, with his eyes open or closed, to "see" the object again, even after a lapse of several years. Unlike memory images these images are really seen.³² An extremely vivid example of eidetic imagery is that of an Italian child who, without special effort, could reproduce symbols taken from the Phoenician alphabet. Eidetic imagery is not pathological in nature; it has been found on all levels of intelligence. A certain type of eidetic imagery appears at six years or below, perhaps more frequently than at any other age, and tends to disappear during or after puberty.

Dreams. — Almost one out of two young children studied by means of daily records kept by parents had some unpleasant dreams during a week though the percentage of children disturbed by unpleasant dreams decreased at higher age levels.³³ Children one to four years old dream most often about animals; older children dream increasingly about personal difficulties. The content of the dream comes most frequently from exciting or emotionally toned experiences of the preceding day. Some part of the experience is usually abstracted and changed in character: for instance, a friendly dog seen in the afternoon may become a strange or fearful dog in the dream.

Freud assumes that basically all dreams are related to sex. The results obtained in this study offer little or no support for such a position. With persons in late adolescence and early adult life and with neurotic individuals with unresolved sex conflicts, it is possible that sex may be the most frequent determiner of the dream state. But the dreams of infants and young children seem to be closely related to their daily experiences and are affected by illness, the emotional events, excitement, vigorous play, etc., which occur just

³² Heinrich Klüver, "Eidetic Imagery," in Murchison, Carl, *A Handbook of Child Psychology* (second edition revised), pp 699-722. Worcester, Mass.: Clark University Press, 1933.

³³ Josephine C. Foster and John E. Anderson, "Unpleasant Dreams in Childhood," *Child Development*, VII (June, 1936), 77-84.

prior to sleep. The factors which affect the dream process change with age and with the shifting pattern of motivation and the organization of the psyche. The dream may be regarded as a tension system which originates either on the basis of an experience or an internal need and which takes from the psychic content a form which may or may not have a connection with underlying tension system.³⁴

OTHER SPECIFIC ABILITIES

The specific abilities children develop during the years three to six vary greatly. Most five-year-old children can tell their names, their ages, their addresses, and their fathers' names. Some can count to ten. Some recite pieces. Some have been taught to sing little songs.

Identification of Colors.—Children as young as three years can be taught to give the names of colors. They usually acquire this ability incidentally by five years of age. By six years they have achieved almost perfect accuracy in matching colors of various hues and intensity. Of the three primary colors yellow is liked by infants but loses its initial popularity as the children grow older. Red is the favorite color and blue is increasingly preferred by the older children. A few children, as early as the fourth year, show sensitivity to color harmony. At all ages girls show a higher sensitivity to color than boys. Great variability from these central tendencies is found among children of nursery school age.

Musical Ability.—Differences in musical ability likewise are marked in preschool children. In a group of sixteen children between three and a half and four and a half years, some of them failed completely in learning to reproduce a simple melody on a common tin fife, while others made an almost perfect performance. It was very hard to interest the least capable ones.³⁵

Number Concepts.—Useful ideas of number may be acquired in this period. It is easier for a child to bring five

³⁴ *Ibid.*, p. 82.

³⁵ Martha G. Colby, "Instrumental Reproduction of Melody by Preschool Children," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVII (December, 1935), 413-430.

apples when he is told to than to tell how many apples are in the dish. Piles of sticks containing various numbers were shown to some children, and they were asked to make similar piles. Three-year-olds, on the average, could not reproduce more than piles of two or three. Four-year-olds were successful with six, and six-year-olds could reproduce piles of seven to eight. Making strings of beads, putting pegs in rows, blocks in line, and "cockle shells all in a row" give experience with things in series. This is a good foundation for learning to count. The first attempt at counting is, as it was with primitive people, a naming process. "One" is the name of the first flower in the row. "Two" is the name of the second. If a child is told he may pick four flowers, he will probably pick only the fourth flower. Counting four objects, in response to the question, *How many?* is placed on the revised Stanford-Binet scale at the five-year level. Counting without objects appears to be easier. Five-year-old children tested were able to count almost to twenty-five without error. Four-year-old children will become familiar with one inch, a foot, a pint, a quart if they use rulers and pint and quart measures in their play, and if someone is at hand to name these objects for them. The number concepts acquired through experience in the preschool years supply a valuable arithmetical background for the primary child.³⁶

SOCIAL BEHAVIOR

Young children grow in social behavior and mental activity during their attendance at nursery school.³⁷ This growth is due partly to maturation and partly to the social environment, training, and guidance offered by the school. Social behavior increases insofar as the situation is conducive to it. Observation of twenty-one nursery school children at the beginning and at the end of six months at nursery school

³⁶ Clifford Woody, "Arithmetical Background of Young Children," *The Journal of Educational Research*, XXIV (October, 1931), 188-201.

³⁷ Helena Mallay, "Growth in Social Behavior and Mental Activity after Six Months in Nursery School," *Child Development*, VI (December, 1935), 303-309.

showed growth along the following lines (1) increase in the time spent in social contacts and in the number of children involved in these contacts, (2) greater skill in the use of technics of making social contacts, (3) increase in the proportion of time spent in active use of material and constructive use of equipment, and (4) increase in attention span with materials and with other children. These aspects of growth might serve as specific objectives for parents and nursery school teachers.

Contacts with Other Children — The two-year-old likes to be with other children, though he does not like interference with his activities. Generally, he prefers to play with material rather than with other children. This is the age of parallel play in which he plays near other children rather than with them. Even with other children available, the two-year-old child may be expected to play alone more than half the time. When he does play with other children, it is usually with a single child.

By the age of five years children more frequently play together in groups on common projects. Even at five, however, children observed in the nursery school play with material and by themselves one-third to one-half of the time. Children who have been in the nursery school are usually at an advantage in making social contacts.

Social interaction between sisters ranging in age from one year to six years³⁸ seemed to occur in imaginative play to a greater extent than in physical play. Among these sisters signs of distress tended to arouse a sympathetic response in only a small proportion of instances, though what appeared to be sympathetic behavior occurred more frequently among the sisters than among unrelated children in the nursery school. Affectionate responses of older sisters to younger sisters were almost three times as frequent as the same kind of response of younger sisters to older sisters.

The complex nature of sympathetic behavior in preschool

³⁸ Margaret B. McFarland, *Relationship between Young Sisters as Revealed in Their Overt Responses to Each Other*. New York. Teachers College, Columbia University, 1937.

children is admirably discussed by Murphy.³⁹ In certain children there is evidence of a basic trend toward social sensitiveness or a warm feeling toward others in general. Other children show specific patterns taken over from the environment, though the culture patterns are never incorporated *in toto* by any one child. In the terminology of Gestalt psychology, a child's sympathetic behavior is "determined by the structure of the psychological 'field' of which he is a part." Any aspect of a child's social behavior is intimately enmeshed with the whole personality, with the culture in which it develops, and with the meaning of the specific situations to him.

Aggressive behavior develops along with sympathy⁴⁰ within a certain age range. Stimuli to both forms of behavior are to be found in the culture in which the child is growing up. Some children, however, tend to be sympathetic without being particularly aggressive, while others grow up with aggressive tendencies predominating.

The "social conflicts" of preschool children range in severity from vigorous fights and quarrels to mild verbal or physical interferences and aggressions. The frequency and methods of conflict vary with the environment. A restricted space and poor play facilities favor frequency of conflict. Of three groups studied Jersild and Markey⁴¹ found the smallest amount of quarreling and aggressive acts in the nursery school that had the use of a large outdoor playground and the largest amount in the nursery school located on the roof of a building, equipped with fewer play facilities in proportion to the age and number of children present.

The factors precipitating conflicts can be classified into two groups — "overt or verbal aggressions against another's material possessions, space, or play activities" and "aggres-

³⁹ Lois B. Murphy, *Social Behavior and Child Personality*. New York: Columbia University Press, 1937.

⁴⁰ *Ibid*, p. 170

⁴¹ Arthur T. Jersild and Frances V. Markey, *Conflicts between Preschool Children*. Child Development Monographs No. 21. New York: Teachers College, Columbia University, 1935.

sions against the person of another." These occurred in the proportion of two to one.

The teacher's method of settling the conflicts arbitrarily by deciding for or against one of the combatants did not seem to be effective. In fact, when restraints were removed, the most marked increase in conflicts was found in the group where teacher interference had been most persistent and deliberate.

Getting what he wants by aggressive behavior may appear to the four-year-old child highly desirable and correct. One three-and-a-half-year-old youngster engaged in the following conversation with his mother: "Are I a good boy?" "Are you?" his mother asked. At that question his face lit up, he squared himself, and said, "Sure, I'm good. I'm tough. I fight an' everything." During the preschool years children begin to learn through their own experiences what nations have not yet learned, that physical combat is not the best way to settle disputes.

As the child grows older it is increasingly difficult to know what the observed behavior really means to him. When is "protective behavior" not protective behavior, "resistance," not really resistance? When is sympathetic behavior motivated not by a genuine concern for the distress of another person but by a desire to obtain approval from the person to whom sympathy is shown or from an adult?

Technics of Making Social Contacts — In a favorable environment, such as that of a good nursery school, spontaneous co-operation is frequently noticed. One day, when a three-year-old girl did not know where to hang her hat and coat, a little boy took her by the hand and showed her. Two children played together with the swing, one pushing and the other swinging. Two children set the table together without any supervision from the teacher.

Friendly overtures, however, are not always accepted. One child dragged out two wagons and said to another child, "Do you want to sit in two wagons?" No response. "Come on and sit in two wagons." But the one appealed to was interested in something else and paid no attention. Several

were playing at the sand table at the same time, but each was interested primarily in his own activity

Any type of social behavior may grow out of a number of tendencies — the desire for physical activity, for the society of others, for mastery, and for doing what grown ups do. The aim of social education should be not unselfishness or non-selfishness, but the development of a self that desires to act in ways that are advantageous to himself and to others. A child should have his own way, whenever his way is a good one in a given situation.

Technics of social behavior develop in response to demands of the situation. The twin, Jimmy, inferior to Johnny in certain motor skills, became the more skilful in inducing Johnny to climb up and get jam for him. In other experiments children frequently ask the investigator for help in solving the problems presented to them.

Table Manners and Social Conventions. — If at the end of the fifth year a child has learned to eat quietly with his mouth closed while chewing; to use knife, fork, and spoon habitually and fingers only rarely; very seldom to upset his milk; to use napkin or bib properly; and to say *please* and *thank you* spontaneously; his parents should be content. It is possible, of course, to establish many other social conventions, but, perhaps, at too great a cost of nagging or the risk of developing in a child a rather priggish, individualistic sense of superiority in his accomplishments and self-consciousness about them. In an environment in which adults show the conventional considerations for others the child is likely to adopt many of the conventions without specific attention to training in them.

In some homes and in some nursery schools these forms of social convention are overemphasized, and the child judged on behavior which has little fundamental relationship to his main developmental needs. The extremely model child shown off by his parents is as poorly reared as the exceedingly obstreperous youngster. Surely, there is a middle ground between these two extremes. Adults have a right to insist on a few rules and to protect their own peace and

comfort. At the same time, young children have a right to social experimentation — to find out what the consequences of certain kinds of behavior are, and occasionally to learn by their mistakes what is of worth and what to do next time. These lessons, having no natural biological basis, are difficult for children to learn.

Property Rights — Property rights likewise represent restrictions difficult for the little child to comprehend. His exploration of the world about him is hampered by the “inviolabilities that every culture establishes with respect to objects, persons, times, and places.”⁴² If a child needs a toy already taken by another, he must learn to substitute something else in his plans. If he is not using all the sand or all the paste, he should be willing to share it with others. He should ask permission to use the pail and shovel which he knows belong to another child. “Findings” are no longer “keepings.” He should realize that lost property should be returned to the owner. He values things that he has made and he should realize that others value their possessions in the same way. If he makes a mistake when he is still in the process of learning the intricacies of the “accumulate customs of thousands of years,” he should be treated with tolerance and reassurance, not labeled “liar” or “thief.”

Personal Health Habits. — He should also have formed certain personal habits, such as covering his nose and mouth when sneezing and coughing, keeping his fingers away from his mouth, nose, and ears; using his own towel, washcloth, toothbrush, and drinking cup; washing his hands after going to the toilet; and keeping his handkerchief in his pocket whenever he is not using it. He should always wait to cross the street until no vehicles are near, or until the policeman gives the signal to go.

Laughter and Crying. — In addition to laughing in response to the laughter and smiles of others and as a reaction to physical contact such as tickling, nursery school children laugh at the resolution of a dilemma presented to them by a situation. Laughter occurred, first of all, in connection with

⁴² Unpublished lecture by Lawrence K. Frank

social situations, and secondly, with active play on the swing, the slide, a ball, the jungle gym, and other nursery school apparatus but not invariably in either type of apparently similar situations. The potency of certain situations to evoke laughter varied at successive age levels. A common element in laughter-provoking situations appeared to be the completion of some event, an anticipated event, or "the ideational solution of a difficulty"⁴³ Justin⁴⁴ found the causal stimulus a complex one. Humorous elements in incongruity, superiority, and play situations became increasingly potent with age. From two to six years an increasing number of situations provoke laughter in the environments studied. There is some evidence of a positive correlation between frequency of laughter and I Q.

Crying in the nursery school occurred most frequently at the end of the morning when the children were tired and hungry. This tendency decreased when the rest periods were better adjusted to the children's needs. Crying in the nursery school is at first caused largely by a sense of insecurity; later, chiefly by discomfort and distress.

There is some tendency for children two to four years of age to be consistently jolly. Records of laughter made one year agreed rather closely with similar records made the next year. Crying was a less consistent form of behavior than laughing.⁴⁵

The amount of laughing and crying in the nursery school is small and obviously not typical of many other types of situation in which children of these ages are found. In the nursery school, for example, deliberate attempts to amuse children, such as fond grandfathers and uncles make, are lacking.

⁴³ W. E. Blatz, K. D. Allin, and D. A. Milchamp, *A Study of Laughter in the Nursery School Child*. University of Toronto Studies, Child Development Series, No. 7, 1936.

⁴⁴ Florence Justin, "A Genetic Study of Laughter-Provoking Stimuli," *Child Development*, III (June, 1932), 114-136.

⁴⁵ Catherine W. Brackett, "Laughing and Crying of Preschool Children," *The Journal of Experimental Education*, II (December, 1933), 119-126.

Individual Differences — Individual differences in social habits acquired during the first five years are very great. Some children will play alone most of the time while others are usually found in a group. They differ in their choice of play materials and in the relative amount of time they spend in solitary as compared with truly social play. Some approach strangers with the greatest friendliness and candor while others refuse to speak in response to the most cordial greeting.

In Marston's experiment ⁴⁶ with children two to six years, the experimenter, seated at a small table and playing with a teeter-totter, subjected each child in exactly the same way to six degrees of invitation.

1. He entirely ignored the presence of the child for sixty seconds.

2. He looked up at the child but "did not smile, or make other overtures of friendliness"

3. After thirty seconds he looked up again and smiled

4. After another thirty seconds he asked, "Do you like to teeter-totter?"

5. After thirty seconds more he looked up and asked cordially, "Would you like to play with this teeter-totter?"

6. He finally said reassuringly, "You may; come over and play with it"

Some children waited for no invitation, but ran immediately to the experimenter and began to play with the toy. Some children approached and began to play with the toy as soon as the experimenter recognized their presence with a smile. Some waited for the invitation, "Would you like to play with teeter-totter?" Some needed additional assurance before they approached. Some required considerable urging, while others continually refused to speak, smile, or touch the toy. It would be interesting to have known all the details of each child's training to see what environmental conditions tended to produce these different social attitudes.

⁴⁶ Leslie R. Marston, *The Emotions of Young Children*. Studies in Child Welfare, Vol. III, No. 3, pp 50-57. Iowa City, Iowa University of Iowa, 1925

Berne⁴⁷ measured respect for property rights of other children by giving each of two children a toy and then introducing a third child into the situation. The individual differences shown by this small group of children were likewise marked, and the behavior in this situation also was influenced by the age and mental ability of the child.

The kind of social responses which a child makes depends largely on the way children and adults have responded to his behavior in the past — whether they have made a given act satisfying or annoying to him. Although the inherited nervous structure of the individual enters into the initial social responses which are made, the parents, teachers, playmates, and other subtle environmental factors determine, to a large extent, the child's persistent pattern of social behavior.

EMOTIONAL DEVELOPMENT

Fortunate is the child whose early years are serene and secure — a serenity and security based upon active conquest of natural fears and frustrations, rather than protection from all possible sources of fear and danger. Thus, emotional development may be viewed as an active learning process, akin in this respect to motor and to language development.

It is no wonder that the two- to three-year-old child is frequently emotionally hard to manage. He is thwarted on every hand by the necessity of conforming to the family routine which may be quite different from his own natural bodily rhythms. He has a still clumsy body to manage and insufficient insight to see that he will tumble or that his wagon will bump into things. He feels frustrated when playing with older children because of his inferior skill. He wants to play with them but does not know how. He has not sufficient mastery of language to explain all his difficulties. It is hard for him to make himself understood.

Anger. — Anger is one form of adaptation to the environment. It is one way of meeting a difficult situation. Its

⁴⁷ E. V. Berne, *An Experimental Investigation of Social Behavior-Patterns in Young Children*. Studies in Child Welfare, Vol. IV, No. 3. Iowa City, Iowa. University of Iowa, 1930

manifestations may be expected to change with advancing age. The infant's primitive display of undirected energy attracts attention and often leads to the removal of the offending pin or the satisfaction of the hunger which has evoked the behavior. At three years of age, however, the same response would normally bring annoyance rather than satisfaction. Accordingly, the child changes his tactics and directs his emotional energy more effectively to a particular end. A two-year-old who felt deprived of his share of affection would be apt to hit the baby brother or sister, while the five-year-old, because of social pressures that have been brought to bear on him, would be more likely to hurt the younger child's feelings than his body. A six-month-old baby is excused for pushing away and spitting out food which he dislikes, but a five-year-old who angrily shoves away the proffered food shows a retarded emotional development. Such primitive expressions of anger as kicking, stamping, screaming, crying, throwing objects, struggling, biting, and refusing to budge gradually fade out of the picture as they fail to get the results which the child desires and as he learns better to direct the energy liberated at the beginning of his attempt to overcome an obstacle.

Fear. — Fear responses, like anger, are part of the child's total behavior, and increase and change with his general intellectual development and his ability to control the environment. They become more specific and differentiated during the years from two to six. There have been a number of investigations which have supplied definite information about the fears of preschool children. Jersild and Holmes⁴⁸ have obtained parents' reports of children's fears and have studied fear behavior by means of observation and experimentation.

In the groups studied, there was, from two to five years, an increase in fear of the dark, being alone, imaginary creatures, kidnapers, matters associated with death, dreams and

accidents that may occur in the future. Among the 105 children studied, ranging in age from twenty-four to seventy-one months, Jersild and Holmes⁴⁹ found that the dog and the snake were the most effective causes of fear of the eight situations presented. The dark evoked the next largest number of fear responses. Next in order of their effectiveness in arousing fear were being on what seem to them a high place, meeting a strange person, and hearing a loud sound. The least fear was shown by these children when their footing was insecure and when they were left alone. There was a decline in the fear reaction with age, especially with respect to insecure footing, the strange person, the high place, and the loud sound.

Intelligence appears to be a factor in the incidence of fear. Imbeciles have been found to have fewer fears than normal children. The more intelligent children in Holmes' investigation seemed to develop fears earlier than the less intelligent. Girls tended to be more fearful than boys.

The most extreme cases of fear behavior seemed to be associated with overdependence upon adults, emotional instability, insecurity in social relationships, inability to protect their rights from other children, and lack of skill in physical activities.

A pseudo-fear response may be retained by a child as an attention-getting device or as a disguise for other needs which he will not reveal. As such, it may continue long after the emotional reaction itself has faded away.

A degree of caution concerning certain objects and activities is, of course, commendable, and must be retained. For example, caution regarding autos consists of stopping before crossing the street, looking in both directions, and knowing how to cross the street safely. The fear of strangers is a fear which should be modified rather than encouraged. Caution is quite different from intense, blind, irrational fear.

In the case of rational fears, such as fears of storms at sea, lightning, earthquakes, and other things which do present real danger, an attitude of courage may be built up.

⁴⁹ *Op cit*, pp. 177-205

Even small children have learned to face courageously things that are inescapable. A child who has been exposed to danger or has been in a serious accident may live in dread of a recurrence of the situation. These children need long-continued security and may sometimes be helped by repeated dramatizations of the incident.

There are wide individual differences in children's responses to annoying or fear-provoking situations,⁵⁰ depending, in part, upon the child's perception of it. Some children will persist in a difficult situation while others, at the first contact with the pain or fear-provoking stimulus become so upset that they will not try again, even when urged. Instead of distracting the child's attention from the unpleasant elements, the teacher or parent, in certain situations, will have better success if the goal is emphasized. Whenever the child directs his own activities toward a recognized goal, resistance to the annoying elements tends to be decreased, and he persists in the task in spite of difficulties.

Love.—Children need affection. The impersonal "scientific" approach to children that was popular in the 1920's is being modified in the direction of greater warmth of feeling. "Mothering," in the sense of giving a child the feeling that he is loved and cherished, now has the sanction of scientific child study.

On the other hand, intense affection between the child and one parent is undesirable. If one parent does everything for the child and absorbs too much of the child's affection, the child may become excessively dependent; the parent, excessively anxious. There may come a time when this exclusive affection is no longer given, when a new baby has arrived, for instance. The child then frequently seeks this lost affection in daydreams and in other unconstructive ways. During the preschool years the child should not be tied too closely to his mother's apron strings. He should grow gradually toward that independence which he will eventually achieve during adolescence.

⁵⁰ Buford Johnson, "Variations in Emotional Responses of Children," *Child Development*, VII (June, 1936), 85-94

Mental Mechanisms.—Some children begin to use various mental mechanisms soon after they have learned to talk. They would evade facing facts by rationalizing their behavior, by making excuses, and by offering plausible explanations. These early habits, if they bring the child satisfaction, may be built into undesirable permanent emotional patterns. Dr. Leta S. Hollingworth gave an excellent illustration of the various mechanisms an intelligent child may try out experimentally when he is in a "trap" situation. A little girl who had been told not to play with the electric light fuses one evening inserted a metal object in one of the sockets and blew out the fuse. The child's first response was the rationalization, "Oh, we all like the nice dark." This statement being denied, she said, "This is my house, I bought it with the money in my bank." The fallacy of this statement likewise was pointed out. Then the child resorted to crying, but this elicited no sympathy. Finally, after trying out several other methods of escape from the unpleasant situation, the child said, "I'm sorry I did it, and I'll not do it again." This way of meeting the situation was accepted by the adults. It was the only way out that brought satisfaction to the child. The importance for the child's mental health of such wise guidance is obvious.

Curiosity about Sex.—At three or four years of age children frequently begin to show curiosity about where babies come from and what is the difference between little boys and little girls. The little French *Trott* asked the lady at whose house he was staying during the time when a baby was expected:

*Madame, je voudrais savoir d'où viennent les petits enfants. Jane dit qu'on les trouve sous les choux. J'ai vu une image où une cigogne en tenait un dans son bec. Et Bertrand, le jardinier, m'a raconté qu'on les achetait au marché comme des petits canards. Mais je sais que ce n'est pas vrai. Dites, madame, comment est-ce qu'ils viennent?*⁵¹

Translation "Madam, I should like to know where little children come from. Jane says that people find them under cabbages. I saw a picture

⁵¹ A. Lichtenberger, *La Petite Soeur de Trott*, p. 8. Paris: Librairie Plon, Plon-Nourrit et Cie.

where a stork was holding one in his beak. And Bertram, the gardener, told me that people bought them at the market like little ducks. But I know that isn't true. Tell me, Madam, how do they come?"

At this period curiosity about sex and awareness of sex differences is natural and should be satisfied in a matter-of-fact way.⁵² The importance of getting a wholesome attitude toward sex at this early age cannot be overemphasized. Where there are a number of children in the family this curiosity is early satisfied in the daily routine of washing and dressing. When the child asks questions about sex and procreation, he should be enlightened and reassured. His anxiety is increased by tenseness, secrecy, suppression, or disgust expressed in the adult's manner. In the preschool years children should learn to accept their respective masculine and feminine roles and to be spontaneous in the normal expression of their affection.

Jealousy. — Jealousy of brothers or sisters seems to be associated more often with age differences of from eighteen to forty-two months than with age differences either greater or less than that amount. Sewall⁵³ found a steady decrease in jealousy as children advanced in age from two to eight years and also a decrease with increase in size of family. The data concerning relationship of jealousy to intelligence were inconclusive, although there was a slight increase in the proportion of children showing jealousy as groups with progressively higher intelligence were considered. Teachers and parents may help the preschool child to combat jealousy by building up his self-respect, by encouraging him to take an active interest in other children, and by giving him assurance of their interest and affection.

DEVELOPMENT OF PERSONALITY

Personality may be defined as the continuous organization of those patterns of mental and motor activity that constitute the individual's typical adjustments to his environment.

⁵² For a further discussion of this point see Frances B. Strain, *New Patterns in Sex Teaching*. New York: D. Appleton-Century Company, 1934.

⁵³ Mabel Sewall, "Some Causes of Jealousy in Young Children," *Smith College Studies in Social Work*, I (September, 1930), 6-22.

Personality may be organized around certain focal traits or personality Gestalten characteristic of a given developmental level. Thus, Buhler,⁵⁴ for example, suggests that once the child of one year to two years achieves the level of imaginative experience, all of his activities—expressive, movement, drawing, construction—are colored by it.

Moore⁵⁵ studied the adjustment of a small group of nursery school children to obstacles and distractions introduced in an activity that had previously been learned. He also studied the personality traits observed in this experimental setup by means of ratings by nursery school teachers, daily records by teachers of situations in which children needed help, systematic hourly observations of each child, and visits to the home.

Recently, several attempts have been made to study the relationship between certain personality traits and the kind of treatment in the home. A real difference was found between the methods of discipline used by parents in two groups studied,⁵⁶ but less convincing evidence of a relationship between the personality traits and the kind of discipline. The parents of the group of lower socio-economic status used the following methods more frequently than did the parents in the higher occupational group: penance, such as making the child sit on a chair or go to bed; a display of temper to get the child to do what was wanted; and unconsidered, impulsive punishments which might pop into the parent's head at the moment. There was some tendency for desirable characteristics, such as sociability with other children, attractiveness of personality, the tendency to face reality, and independence of adult affection or atten-

⁵⁴ Charlotte Buhler, *Der Menschliche Lebenslauf als Psychologisches Problem* Leipzig Hirzel, 1933

⁵⁵ E. S. Moore, *The Development of Mental Health in a Group of Young Children: An Analysis of Factors in Purposeful Activity* Studies in Child Welfare, Vol. IV, No. 6 Iowa City, Iowa University of Iowa, 1931

⁵⁶ Mary Ellen Ayer and Robert G. Bernreuter, "A Study of the Relationship between Discipline and Personality Traits in Little Children," *The Pedagogical Seminary and Journal of Genetic Psychology*, L (March, 1937), 165-170.

tion to be developed when types of discipline that involved temper on the part of the parent, were not used.

Jones and Burks⁵⁷ have made such an excellent, concise summary of development in personality of the preschool child that it will be quoted in full here:

The child acquires a capacity for more social activity, and for more maturity in his social attitudes. He learns to co-operate more readily, to respect others' property rights, in some small measure to lead or to follow a leader, as the occasion demands. He is apt to be negative in certain situations, but to overcome this in large measure by the end of the fourth year. He is apt to laugh most in social surroundings and to find more complicated and more abstract situations mirthful, as he grows older. He comes to employ language more as a means of communicating his ideas and his wishes to other persons than as a means of "thinking out loud . . ."

The influence of such complicating factors as intelligence level, socio-economic status, parent-child relationships, and the like have been recognized but not adequately investigated. Nor could we predict very extensively from the data on groups of children as to what an individual child may do in a given situation, or over a period of time.

A DAY AT A NURSERY SCHOOL⁵⁸

Parents who have children in a nursery school learn much about the environment, treatment, and schedule suitable for their children. The following description of a day at a modern nursery school may have in a smaller degree some of the same values as a direct observation of activities carried on there.

Three-year-old Betty was brought to the nursery school and taken first of all to the doctor's office. The nurse looked at her throat, and noted any unusual paleness or flushing of the face, any discharge from eyes or nose, any rash or swelling, or any sign of unusual fatigue. Each child is

⁵⁷ Mary Cover Jones and Barbara Stoddard Burks, *Personality Development in Childhood*, Monograph of the Society for Research in Child Development, Vol. I, No. 4, p. 49. Washington, D. C.: Society for Research in Child Development, National Research Council, 1936.

⁵⁸ Excellent concrete detail regarding nursery school practice may be found in *A Manual of Nursery School Practice* by Iowa Child Welfare Research Station, Iowa City, Iowa, University of Iowa, 1934.

examined in this way before he goes with the other children, in order to prevent the spread of measles, diphtheria, whooping cough, or any other communicable disease, and in order to see if the child is well enough to be in school for that day.

Then Betty went upstairs to the nursery school. The teacher greeted her and helped her take off her coat and hat. Betty hung them on the hook that had her name pasted above it. She got her apron from her own cupboard and was ready to go out to play. On the playground there are a very low strong swing, kiddie cars, wagons, big balls, boxes of all sizes, a sand box with pails and shovels and moulds, a place to make mud pies, a ladder and "jungle gym" to climb, wooden boxes of all sizes, blocks of all sizes and shapes, and a board elevated at one end. Most of the equipment is such as any backyard would furnish.

One little boy wanted to close the door. He got a box, climbed up on it, unfastened the latch, climbed down, and put the box away.

Three-year-old Betty began to play in the sand box. She put some sand in a mould, turned it out, and said, "Look at my cake." She asked another child who was also playing in the sand, "Do you want some sand?" "I got some," he said. When Betty spilled some sand on the floor, she went to a cupboard, got a little broom, and began clumsily to brush it up. The teacher encouraged her effort to handle the broom better.

A boy tried to throw a piece of paper off the roof. The teacher said slowly in a pleasant voice, "We never throw papers on the street. We put them in the waste can." The child understood, went to the waste can, and put the paper into the can.

At 9:30 A.M. each child was given about $\frac{1}{4}$ cup of orange juice.

Betty had learned to walk up and down the slanting board all by herself. Sue was afraid to try it. The teacher suggested that Betty take Sue's hand and walk beside her as she walked up the plank. She went cautiously, laughing delightedly at the exciting experience she was having. Betty

next turned her attention to blocks. She built a tower. A little boy took a stick and very deliberately pushed the tower over. This did not seem to annoy Betty at all. She started building again, this time more systematically. Then the little boy took the top block off and threw it away. This did annoy Betty. She hit him with a block, and he accepted this form of immediate natural punishment and did not interfere with her again.

Betty joined some children who were building a house of boxes. Some of the children got a big paint brush and water and made believe to paint the house. One made believe that there was an electric light which was broken. He got a *hammer* to repair it.

At the end of the morning play period the children began putting the toys away. Several did not do this. The teacher said to Betty, "June is going to put her boxes away. You put your wagon away." Betty went off with the wagon and came back saying, "I put the wagon away." Each child had some share in putting things away.

When Betty came into the indoor room she took off her play apron and hung it up. Then she went to the wash-room where there was a row of washbowls of just the right height and liquid soap. Towels, washcloths, and combs were hanging on hooks with each child's name pasted under a hook. The littlest ones identified their hooks by a picture of a bird or flower instead of the printed name. The children washed their hands and faces thoroughly before eating.

Betty put oilcloth doilies at each place on the little painted tables. A boy three years and nine months old asked if he might help with the plates. He put both plate and doily on at one time. Betty saw that this was a good idea and imitated him. Some of the other children sat quietly listening to phonograph records. One child asked the teacher, "Why do you wear white shoes? How do you make them white?" The teacher took him out to show him how she makes her shoes white. Another child coughed — the teacher told her to put her handkerchief over her mouth when she coughed. Some looked at a Mother Goose book.

When the table was set, the maid brought in a covered glass dish of mixed sliced fruit, two covered pitchers of milk, a covered plate of bread, little glass cups, double boilers with pea puree and creamed potatoes, and little baskets of graham toast. One child carried a pitcher of milk to each table. Cream cheese sandwiches were put on each table. The younger children had bowls; the older children, plates. On each child's dish was put the creamed potato and pea puree, and on top of that a spoonful of finely chopped raw lettuce and celery. Then the children all went to the table and stood by their chairs while they said:

God is great and God is good,
Let us thank Him for our food.

After lunch, Betty cleaned her teeth with her own toothbrush, and then lay down on a canvas cot for her afternoon nap. The role that the teacher played in this nursery school is significant. She was there to see that the right kind of play materials were provided and to help the children do better the things they would naturally do anyway. She did not interfere with anything they were doing unless it was something which interfered with the activity of another child, was destructive of materials, or involved immediate harm to the child, or lack of stimulation for him. Occasionally she showed a better way of doing something, suggested that one child help another, or gave approval to special effort. Now and then, she called attention to some kind of conduct that was desirable or undesirable. There was nothing in her manner to arouse antagonism. She laughed with the children a great deal, and helped create a happy atmosphere. The teacher's manner was one which many parents and other teachers might well imitate.

QUESTIONS AND PROBLEMS

1 Ask a number of preschool children to draw a man. Compare results with those reproduced by Gesell in *Mental Growth of the Pre-School Child*, pages 214, 215, or, better still, score the drawings accu-

rately using Goodenough's book, *Measurement of Intelligence by Drawings* (World Book Company)

2 How many features of the nursery school described in this chapter may be applied to preschool children in private homes?

3 Keep a stenographic record of the language used by one child during a day. How many words did he speak? How many different words did he use? What was the longest sentence? What was the average length of a sentence? How many times did he use complex sentences? Were the pronouns used correctly? What grammatical errors were made most frequently? How did his language ability compare with that of the majority of children? What practical use did he make of his language ability? What incentives did he have to speak effectively?

4 Outline the growth in social behavior which may be expected of children between two and six years of age.

5 Note the helpful acts which a certain child performs during a day

6 Observe a particular child, and estimate his height, weight, posture, nutritional condition, hearing, sight, condition of nose and throat, and intelligence. Then study the records of this child to see how closely your estimate approaches the real facts in the case

7 Outline the growth in intelligent behavior that may be expected of certain children between two and six years of age in a given environment.

8. Devise a simple memory test and try it out on several children of ages ranging from two to six

9 Play ball with preschool children of various ages and note the differences in their co-ordinations and in their emotional and social reactions

10. Trace the influence of the culture on the behavior of several children.

CHAPTER X

HOW PRESCHOOL CHILDREN LEARN

Parents and teachers have been too concerned with the end results of learning and too little with the process itself. What a child is taught is not more important than when he learns, under what conditions, and from whom. It is the latter factors that determine the kind of trace that is left as a result of any experience and the effect it will have on future behavior. Examinations and tests—the usual measures of the end results of learning—reveal how much has been forgotten but not how the process has affected the child emotionally. The older type of moral education and modern psychology are alike in emphasizing conduct, but they are different in their concepts of conduct. The old-time moralist was content if the child, to all outward appearances, conformed to custom. The modern psychologist wants to know how acceptable a particular learning is to the child, what attitudes he develops toward learning, and how it fits into his total scheme of things.

The continuous, advantageous modification of behavior that takes place in a particular situation depends upon the demands of the immediate situation, the child's original nature, his previous learning, and his present physical condition. These four factors—the external situation, the child's native capacity, his previous experience, and his bodily condition—enter into all the learning processes of the child. The past, even his relatively short past, consciously or unconsciously influences his present. The present likewise is potent, and insistent in its demands.

INFLUENCE OF THE EXTERNAL ENVIRONMENT

Some environments, such as that of the Virginia Hollow folk,¹ offer relatively little incentive to learn. Other en-

¹ Mandel Sherman and Thomas R. Henry, *Hollow Folk*. New York: Crowell, 1933.

vironments encourage the most effective learning of which the child is capable. A child grows mentally as his environment makes demands upon him. The most important factors in the environment of children from two to six years of age are the play materials and equipment, the companionship, the tasks, and the instruction and guidance.

Play Materials and Equipment — Toys, play materials, apparatus, space, and freedom help preschool children to acquire muscular control, methods of solving problems, and technics of making social contacts. Play materials are so important because they guide children's activities and, if carefully chosen, lead to progressive development in attention span and skill. Clay, crayons, painting materials, blocks, scissors, and puzzles evoke interest and creative responses. Wagons, dishes, dolls, doll furniture, and hollow blocks encourage co-operative play because they are more interesting when several children use them.

Children's toy preferences have been studied by observing children at play. Although the preschool child's choice of toys is influenced by the specific object and the particular situation, certain types of play material are usually popular. Blocks, clay, and dolls with their equipment appeal to the entire age range of the nursery school.² Three-year-olds enjoy wagons more than do two-year-olds, and are interested in scooters and tricycles. Only the more mature of the nursery school group found crayons fascinating. The younger children like play material involving more vigorous activity.

Under other conditions a combination of several play materials had the greatest "holding power" for six children between two and three and a half years of age.³ The average interest span, however, was only eighty-one seconds. These children preferred play materials in the following order: clay and crayons; pictures, blocks, and books; house-

² Dorothy Van Alstyne, *Play Behavior and Choice of Play Materials of Preschool Children*. Chicago: University of Chicago Press, 1932.

³ D. L. Cockrell, "A Study of the Play of Children of Preschool Age by an Unobserved Observer," *Genetic Psychology Monographs*, XVII, No. 6 (December, 1935), 377-469.

keeping materials. At this age companions appeared to have the least appeal.

Some of the favorite play materials are the least expensive. Boxes of all sizes, trees, fences, cellar doors, a swing, a seesaw, planks of different widths — six to twelve inches — raised at one end, rocks to climb up, a little ladder firmly fastened to the barn or garage, the kitchen stepladder chair — all these provide opportunity for the development of the large muscles. White paint or chalk may be used to draw lines for the child to walk on. A piece of tape or even a crack in the floor may furnish amusement, and training in balance and good posture. Concentric circles may be drawn on the ground or painted on the floor of the barn or garage. The child may stand in the center of these circles and see how many circles he can jump across.

Some mothers say, "I'm afraid he will fall and hurt himself if I let him climb." The chances are that if he learns to climb first a low sturdy chair, a small fence, a firmly fastened ladder of two or three rounds, and gradually more difficult things, he will not hurt himself so much as if he were allowed no opportunities for climbing when he was three and four years old, and at six years attempted the difficult stunts the other children were doing.

What toys to provide depends partly on the child's environment. The country furnishes a wealth of natural play material. The seashore also has its own play things — its immense sand table, its shells and stones, its logs, and the curious things washed up by the sea. These need only a little supplementing. In cities and crowded places the problem becomes more acute. Back yards, fenced-in flat roofs, a near-by park or vacant lot have already been suggested. The sidewalk outside the house may have to be resorted to. At least one can roller skate on it if the law allows, and hoops, express wagons, kiddie cars, and doll carriages may be used here if consideration is shown for pedestrians.

Toy hoes, rakes, brooms, and other household and farm implements are apt to be too poorly constructed to do real work with. Standard tools of the smallest size that is made,

cut down to a length that the child can easily handle prove more satisfactory. The same thing is true of carpenter tools. A small-sized well-made hammer, saw, and nails are better than an entire box of toy tools that look cute but do not work.

If a separate room can be set aside for the children, it can be made attractive with a stained, shellacked wooden floor or a covering of smooth, brown linoleum, a table and chairs just the right size, painted a clear apple green or other favorite color; growing ferns or flowers, gold fish in a bowl, and cupboards or open shelves for books and toys. If space does not permit a separate room, some corner should be provided for the child's private possessions—his large soft rubber balls, dolls with removable clothing, doll's bed, bureau, and dishes which can be used just as adult's furniture is used; pencils, paper, blunt scissors, crayons, blocks with holes to put pegs in, and building blocks which may be made at home by cutting a two-by-four or a four-by-four-inch board into various lengths from two inches to several feet. These are all toys that he can use in constructive activities. They are simple and inexpensive. No one has to worry for fear he will break or damage them. Each toy should have its own place in his cupboard, so that the child will not have too many around at one time. The doll's furniture should fit the doll for which it is intended. The bed should be big enough for the doll to sleep in and the chair the right size for her to sit in.

Children love to play in the water. If there are no little brooks or ponds out of doors to play in, the bathroom, the kitchen sink, or a wooden or tin wash tub help to supply this lack. The opportunity to put on a rubber apron or a summer bathing suit, or with a towel pinned around his neck, to play with the little boats one has made, and celluloid aquatic animals, makes any day a red-letter day for a small child. On a rainy day, dressed in his water-proof coat, hat, and boots, or in a bathing suit if the weather is warm, the child can play out of doors in the rivulets and



Underwood & Underwood

A YOUNG GARDENER

Working in a garden is an excellent activity for children of all ages. It combines the values of sunlight, big-muscle activity, and interest in an absorbing and useful occupation.

puddles. Rainy days, when spent in this way, are welcomed rather than rebelled against

All sorts of materials to handle, look at, and listen to give children a wealth of sense experience. Colored scraps of silk and other fabrics, material of varying weights and sizes, musical bells, wooden tone bars, and feathers are fascinating to manipulate.

Attention should also be given to the aesthetic aspect of the environment. Any home can furnish three elements of beauty — simplicity of line and form, a feeling of space, and harmony of color. Elimination of the superfluous is often the first step to take in making the home more beautiful. A wall space for just one picture which can be changed from time to time is a miniature art gallery for the child. Many children's picture books are works of art. A low easel by the window offers opportunity for self-expression. The victrola and radio contain within them the possibilities for both desirable and undesirable cultural influences.

Taking away a child's play material results in restlessness more frequently than in stimulation of highly imaginative play and conversation. It has been found that frustration resulting from making unavailable the toys previously enjoyed by certain preschool children produced restlessness, attempts to escape from the frustrating situation, a marked reduction in the amount of play, a decrease in the constructiveness of play, marked increase of tension indicated by boisterousness and the like or decrease of tension indicated by passive behavior or quite highly imaginative play and frequent changes in mood and in emotional expressiveness. Depriving these young children of play materials, instead of leading them to seek companionship threw them back upon their own resources. On the other hand, providing play materials that required collaboration encouraged co-operation.

Companionship with Other Children — Children learn from each other. Big brother's conversation is often a strong incentive to little sister's speech. One two-year-old girl tries to imitate everything her three-year-old brother

does. She does not, however, copy his sentence structure exactly, but uses her own emphasis, usually putting what is to her the most important word first as, "Down fall the ball," "All gone, Daddy" (to signify her father's departure). The socialization process is achieved through daily association with other children of approximately the same age. The desire to play an adequate part in a group of one's own age is more effective in developing self-discipline than the admonitions and logic of parents. The following is an example of discipline by the group. An aggressive six-year-old boy hit one of the little girls in the play group and made her cry. The little girl's mother saw what happened from a window but said nothing. The other children did the disciplining. "Tommie, you bad boy. You go right away. You can't play with us if you hit Mary Jane. You go right home," they said. This was certainly an effective learning situation for Tommie. He found that hitting other children brought him no satisfaction at all, and that he must modify his tactics in order to remain in the group.

The Tasks.— Learning is facilitated by a succession of tasks within the child's ability which seem to him to be important. These, ideally, are not problems set by the parent, but rather difficulties that arise naturally in the course of the child's constantly progressing activity.

Instruction and Guidance.— The effect of training on the simpler skills is to give the instructed children only a temporary initial advantage over the untrained group. In so far as the skills that the preschool child learns are more complex and intellectualized than those acquired in infancy, it is to be expected that training will play a larger part in increasing his repertory of knowledge and skills. When tasks of three degrees of complexity were practiced by children from five to six years of age, they showed only a slight superiority over the group having no practice in the simplest task; marked superiority in the more complex task; and still greater superiority in the most complex learning. In this case practice decreased individual differences in the per-

formance of the simplest pattern of learning but increased differences in the more complex tasks.⁴

The way in which directions are given influence the responses the child makes. With preschool children positive, unhurried, specific, and encouraging types of verbal directions are generally more effective than negative, hurried, general, and discouraging types of directions.⁵

Preschool children appear to gain more from a demonstration of the best method of doing a task than from verbal directions. For example, twenty-four-months-old children made substantial gains in learning to play a ringtoss game when they were shown best methods of holding and throwing the ring. They made slight improvement when they were merely told how to do it.

There seems to be an optimum time for learning different skills and for acquiring different kinds of knowledge. If practice is given at this time of greatest readiness, the most efficient learning will result.⁶ Johnson⁷ has emphasized some of the effects of trying to teach things to children before they are ready. Key⁸ neatly illustrated the same principle in the dressing situation. Hilgard⁹ has specifically discussed the question of learning and maturation in preschool children.

In a series of tasks requiring the same general principle, if the child is bright enough to discover the common prin-

⁴ Marion L. Mattson, "The Relation between the Complexity of the Habit to Be Acquired and the Form of the Learning Curve in Young Children," *Genetic Psychology Monographs*, XIII, No. 4 (1933), 299-398.

⁵ Marguerite W. Johnson, "The Influence of Verbal Directions on Behavior," *Child Development*, VI (September, 1935) 196-204.

⁶ Arthur T. Jersild *et al*, *Training and Growth in the Development of Children: A Study of the Relative Influence of Learning and Maturation*, Child Development Monographs No. 10. New York: Teachers College, Columbia University, 1933.

⁷ Harriet Johnson, *Children in the Nursery School*. New York: John Day Company, 1928.

⁸ C. B. Key *et al*, "The Process of Learning to Dress among Nursery School Children," *Genetic Psychology Monographs*, XVIII (April, 1936), 67-163.

⁹ J. R. Hilgard, "Learning and Maturation in Preschool Children," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLI (September, 1932), 36-56.

ciple, he can easily solve the remaining problems. Moreover, his memory of the correct solution is far better than his memory of the mere mechanics of the solution. If the principle is clearly explained to the children who are not able to discover it for themselves, they can readily learn to apply it to situations solved by the same general plan. Learning is greatly facilitated by gaining insight into the internal organization of the problem. Instruction in problem solving involves helping children to discover the organizing principle in a situation. This is true even in the preschool period and becomes increasingly important as the child grows older.

The attitudes of persons in the child's environment have a subtle influence on his learning. A child's self-confidence is fostered not only by the acquisition of skills under favorable conditions of instruction but also by attitudes of persons in his environment and the opportunities offered to think for himself. If a parent considers a brother or sister superior in some respect, the other child is likely to think of himself as inferior and to accept his parent's judgment as final. If parents always make decisions for their child, demanding obedience to their edicts, the child grows up without confidence in making decisions for himself.

Of course, certain important decisions must occasionally be made by the parents on the basis of their superior experience and knowledge. This the children can learn to understand, and not complain as one six-year-old did, "When it's something that doesn't matter much, mother lets us decide, but when it's something important, she makes the decision." The parent should gradually let the child make increasingly important decisions for himself and take the responsibility for his own decisions. For example, children should be given some choice of food. If children eat with adults who are served a wholesome diet, they may be given a freedom similar to that of adults to eat the food offered, with the understanding that there will be no substitutes for any dishes rejected.

INFLUENCE OF NATIVE CAPACITY

The quality of a bright child's nervous system enables him to profit to the fullest extent from past experience and to see relationships in a new situation more quickly than a dull child of the same chronological age. As bright children mature, they increase the speed with which they gain insight into increasingly difficult situations. Their goals are higher than those of the dull children and they reach them more rapidly than the latter reach their lower goals. Or it may be that bright children and dull children grow at approximately the same relative rate each toward their own respective goals. Under environmental conditions that were as favorable to dull as to bright children it might be expected that the learning curves of the two groups would gradually converge. This difference in learning capacity of gifted children and dull-normal children was noted in a nutrition class in which the gifted children in one period gained an understanding of the relation of food to health and growth that was only acquired by the dull-normal group in the course of a semester

Among children of equal ability the effect of training on certain motor skills may be substantial. One of each of two pairs of identical twins, aged four and four and one half were given training in several motor abilities; the other two were not trained¹⁰ The trained twins showed greater improvement between the initial and final tests than did the twins who received no training, especially in hitting a mark by throwing a ball or by rolling a ball. The effect of training, not only on the motor skill, but also on initiative, interest in score, quietness, and other behavior was marked. In other investigations likewise the acquisition of skill has been found to increase self-confidence, courage, and initiative.

There are differences in native physical ability as well as

¹⁰ A. N. Mirenva, "Psychomotor Education and the General Development of Preschool Children: Experiments with Twin Controls," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVI (June, 1935), 433-454.

in mental ability that influence a child's learning. Poor vision and hearing are obvious handicaps to learning. For example, Theodore Roosevelt was exceedingly unskilful in certain sports until his defective vision was discovered and corrected.

INFLUENCE OF PREVIOUS EXPERIENCE

Without memory there would be no learning, for if experience left no trace, it could not improve performance in the future.

The accomplishment of learning as a modification of behavior can be analyzed on its process side into three different constituents (1) the arousal of a specific (the "correct") process; (2) the trace of this process, (3) the effect of this trace on later processes¹¹

All three points are necessarily implied in learning.

The memory of what daddy did on a previous occasion when Bobby spilled the ink may make Bobby act in a certain careful way toward ink the next time he sees it. Some five-year-olds do not know how to climb because they have never had experience in climbing. Some five-year-olds learn to say "please" because they have found they get what they want more quickly and easily if they do. Their previous experience has been with people who make saying "please" pleasant for children. Other five-year-olds whine or rage because they have found they get what they want more quickly and easily in that way. They have had previous experience with people who give whining, wailing children the things they want. A child's reaction to a new situation, and consequently the learning that takes place, depends to a large extent on his experience with somewhat similar situations in the past. An important contribution of previous experience to learning is its influence in changing the way the situation is perceived.

Certain food may daily be on the table, but the child may be taught to perceive it as something to ask for politely,

¹¹ K. Koffka, *Principles of Gestalt Psychology*, p. 541. New York: Harcourt, Brace and Company, 1935.

rather than as something to reach for and grab. Lettuce is lettuce, but the child may be taught to look at it as something that tastes good, that is good for him because of the minerals and vitamins and roughage it furnishes, or as something mother would be pleased to have him eat, rather than something to be pushed away and avoided. One child perceives a dog as something that is friendly and fun to play with. Another child perceives the same dog as something that might bite him or knock him down. Naturally, the responses of the two children to the dog differ. Perceiving things in a certain way is due, in large part, to learning. The child who sees a dog as a friendly creature has had previous pleasant experiences with dogs, which have modified his original idea of dogs to its present form. Similarly, the child who perceives *dog* as something terrifying has had previous painful experiences with the animal.

A great deal of early childhood experience which seems to be obliterated may persist in some substratum of the mind. There is some slight evidence that children learn more readily in the primary school years certain foreign words and expressions which they have heard in infancy. Apparently, traces of early impressions are left even though the conscious awareness of experience passes away quickly.

Thorndike calls attention to the importance of previous experiences in his rule: "Put together things which you want to go together." This does not imply that they are to be put together two by two like the animals entering Noah's Ark, but that they are to be associated as parts of a total situation. Mealtime, for example, should be associated with pleasant conversation, good nature, properly cooked food, cleanliness, good manners, rather than with scolding, complaining, burned food, noise, and untidiness. Seven o'clock for the three-year-old child should, if possible, be associated with good-naturedly going to bed, rather than with making a fuss to stay up as late as possible. Certain places and certain activities should go together: — the playroom with boisterous or quiet play, the library where father is reading

with quiet play, the bedroom at night with undisturbed sleep, and the roomful of visitors with listening on the child's part rather than with too much talkativeness. Certain people and certain tones of voice soon gather their own peculiar associations. When father says "no" or "stop" in a certain tone of voice, absolute obedience follows because that tone of voice has been associated with serious situations in which disobedience resulted in unpleasant occurrences. When Uncle Bill comes, a frolic begins, because Uncle Bill always romps with the children when he visits. The associations which are already built help determine the reaction that will be made in a given situation. In the case of undesirable responses, changing the child's associations with a situation is likely to change his conduct in that situation. The way he responds, therefore, depends to a large extent on his past experiences. Psychologists know these facts, but they have not yet discovered a satisfactory physiological explanation of them.

Interests, likes, and dislikes appear to be acquired in a similar way. Children can be taught to like or dislike things to which they were at first indifferent.

INFLUENCE OF BODILY CONDITION

Bodily conditions, frequently unrecognized, also exert their influence on learning. The contractions of the empty stomach which cause the sensation of hunger may start a five-year-old searching in the pantry. Feelings of fatigue from too much or too little physical activity may distract his attention from the thing to be learned. From animal experimentation has come some evidence that hungry animals and animals so definitely undernourished that growth was inhibited showed superior learning to those that were better fed.

INFLUENCE OF COMBINED FACTORS

It is important to recognize the complexity of learning. No single factor exerts the sole influence on learning in any

situation¹² Failure to learn may be due to lack of power to learn It may also be due chiefly or partially to the retarding influences of anxiety, fear, or inferiority feeling The significance to the child of the thing to be learned, the want of interest, the effect of fatigue, and the clarity of directions all enter into the learning situation

An emotional disturbance, too, will interfere with learning in certain situations. In an experimental study¹³ of preschool children's learning of simple words emotional factors clearly influenced the daily records For example, on the morning that one child came to school crying, his record was very poor. Another child who had been so naughty at home that his mother had refused to kiss him good-by took a longer time that day to learn the words and made twice as many errors as in the previous periods

At any time, in any situation, a single act never occurs in isolation. Its meaning is determined by its setting in the total situation The total situation includes not only the external environment, but also the way the child perceives this environment which is, in turn, influenced by his previous experience, his bodily condition, and the instruction and guidance he has had.

Learning is fascinating to the preschool child Adults sometimes do not realize this and allow their own degenerated attitude toward work to influence the child's natural enthusiasm for useful activity and his interest in learning. Many activities which are useful are likewise pleasurable. A child is usually interested in learning anything that con-

¹² For a thorough psychological explanation of learning see the following:

Arthur I. Gates, *Psychology of Education* (revised ed.), Chapters VIII through XII New York: The Macmillan Company, 1931

H. L. Hollingworth, *Psychology, Its Facts and Principles*, Chapters XII, XIII, XIV New York: D. Appleton and Company, 1928

K. Koffka, *Principles of Gestalt Psychology*, Chapters XII, XIII. New York: Harcourt, Brace and Company, 1935

E. L. Thorndike, *Fundamentals of Learning*. New York: Teachers College, Columbia University, 1932.

Robert S. Woodworth, *Psychology* (third edition), Chapters X, XI, XII. New York: Henry Holt and Company, 1934.

¹³ Lois Hayden Meek, *A Study of Learning and Retention in Young Children*. New York: Teachers College, Columbia University, 1925

tributes to his on-going activity and is so well suited to his capacity that he can succeed in it.

THE DESIRE TO LEARN

Running through the learning process like the warp threads of a fabric is desire or motive. This crucial factor in learning is emphasized by all schools of psychology. Woodworth defines motive as "activities that have got started but are not yet finished."¹⁴ According to this definition, motive resides in the activity. According to the *Gestalt* point of view, motive arises from a sense of incompleteness in the organic system as a whole. According to Thorndike, motive is closely tied up with the readiness of the individual to act in a certain way and with the effect of his act.

Several experiments with young children on motivation,¹⁵ in which the children's responses as well as the motivating stimuli were carefully controlled, suggest several important hypotheses for the education of nursery school children:

Irrespective of success or failure, a definite goal with the possibility of knowing the results of one's efforts evoked more effort than an indefinite goal which did not offer knowledge of results.¹⁶

"Nothing succeeds like success." Success is an important factor in the performance of young children. It maintains initial efficiency whereas failure results in a decrease of efficiency

such as would be expected under either a swift onset of fatigue or a quickly waning interest.¹⁷

Success followed by praise is a significantly greater motivation than failure followed by reproof. Either success or

¹⁴ *Psychology* (third edition), *op cit*, p. 301.

¹⁵ Lucile Chase, *Motivation of Young Children: An Experimental Study of the Influence of Certain Types of External Incentives Upon the Performance of a Task*. Studies in Child Welfare, Vol. V, No. 3. Iowa City, Iowa University of Iowa, 1932.

Harold H. Anderson, "Motivation of Young Children: Further Studies in Success and Failure, Praise and Blame," *Child Development*, VII (June, 1936), 125-143.

¹⁶ *Ibid.*, p. 142.

¹⁷ *Ibid.*, p. 142.

failure has more motivating influence than a mere repetition of instructions. The influence of both praise and blame varies with the total situation and can accurately be studied only when the meaning to the child of a particular treatment is known.

Children ranging in age from two and a half to seven years of age obeyed more willingly and persisted longer in the tasks assigned when positive, specific, unhurried, and encouraging types of instruction were used than when the instruction was negative, general, hurried, and discouraging. In the case of two other groups of preschool children some motivation was clearly more effective than none, but reproof or failure seemed to be a more effective incentive than commendation of success. Waring¹⁸ reported that language approval was superior to nonlanguage approval in teaching preschool children to make simple discriminations.

In Meek's¹⁹ study of learning two children who failed to recognize the words showed marked dislike for the teacher and the activity. "I hate this. . . I don't want to play," one said. "I'm tired of it. It makes me mad. This old game is no good," another said after the third day of failure. But when they were successful in recognizing the words, they liked everything about the situation. "I'd like to play today. Take me," they would say.

Some children fail from lack of desire to enter the situation, not from lack of ability to learn to do the task. They stand apart in their own world and do not enter the field in which the particular problem to be solved is located.

ELIMINATION OF UNDESIRABLE RESPONSES

Unfortunately both parents and teachers have to deal with children who have already acquired bad habits. How may these undesirable responses — that is, undesirable from the standpoint of the child's development — be prevented?

¹⁸ Ethel B. Waring, *The Relation between Early Language Habits and Early Habits of Conduct Control*. New York: Teachers College, Columbia University, 1927.

¹⁹ *A Study of Learning and Retention in Young Children*, op. cit., p. 82.

One obvious way of preventing undesirable responses is to control the situation. If the stimuli which tend to result in undesirable responses can be discovered and eliminated from the environment, the specific incorrect process will not be aroused. If it is not aroused, it will not leave a trace to affect later processes.

Rage, for example, is an undesirable response. Unnecessary thwarting and interference with activity may be avoided. Knocking an expensive vase off the table is an undesirable response. Placing the vase out of reach of the child is one way of preventing the accident. These are illustrations of "the method of disuse." This method, however, does not always result in learning. A stimulus which has been carefully avoided for months on its first reappearance may evoke the same undesirable response.

Vases, granted they are essential to happiness, cannot always be put out of reach of climbing five-year-olds. Matches cannot always be successfully hidden. Ideally, the desirable response to vases and matches should be established before accidents happen, or the habit of playing with matches in a dangerous way is formed. If the wrong way is already established, a better way may, as the occasion arises, be suggested. "The vase is mother's. When you have learned to carry your cup, your bowl, and the pitcher of milk carefully, you may carry the vase to the kitchen, put water in it, and arrange the flowers in it." "Father is going to light the fire. You may carry the matches to him. He will show you how to use matches. You may light the fire whenever father is with you." "Put just about half of that spoonful in your mouth at one time, Bill." "Instead of interfering with Jimmy, why don't you help him build that house he has started?" "See if you can't rub out with this furniture polish the scratches you are making on the table." Outlets for the child's impulses that are likewise satisfactory to other people can usually be found. Three-year-old Cornelia turned off the electric light while the members of her family were eating. When they laughed the first time she did it, she thought it was a fine game and repeated the performance

several times. Her father became annoyed when she did not obey his command to "stop it." Her mother, however, said, "Cornelia, where is your new picture book? Bring it to me." Cornelia immediately trotted off to find the book and never gave the lights another thought. Suggesting other things to do is one way of substituting a desirable for an undesirable response. "The world is so full of a number of things" that activities for children which are also tolerable to adults can usually be discovered. Used automatically, however, and without imagination, this method of substitution is soon recognized by children as a trick to divert their attention. It is effective only when the activity substituted is an intrinsic part of their field of interest and is recognized as such by them.

LEARNING THE LANGUAGE

The suggestions given for the development of speech in the first two years apply as well to this later preschool period. Two points should be especially emphasized: (1) a child can learn no faster and do no better than his level of maturation and native capacity will permit him, and (2) the indirect method of teaching — arranging the situation so that the correct process will be aroused and approval follow its use — is the best one.

Understanding of the Child's Capacity to Learn — Many grownups do not realize how difficult it is for some children to master certain consonants. Walter de la Mare tells about one four-year-old, sensitive about her missing r's, who was embarrassed by having to call Jerry, the dog, *Jellie*, especially in the presence of her brother with his superior six-year-old language ability. She was delighted when her mother "in a moment of inspiration referred to the animal as *Jinks*." Even bright children sometimes appear to be stupid in remembering certain words and in making distinctions that seem easy and clear to adults. Trying to modify children's behavior by merely urging them to change it without regard to their capacity to learn at that particular time is almost certain to set up inhibitions and create friction. Holding

the child responsible and punishing him for laziness or stubbornness when his failure to learn is due to immaturity and lack of experience or mental ability is one of the worst forms of cruelty to children.

Setting the Stage. — Controlling the situation is the most effective method of teaching because the activity embedded in the child's daily doings is meaningful and important to him, the instruction given is immediately useful, and the knowledge or skill learned is more likely to function in new situations.

Every hour of the day is pregnant with learning opportunities. The five- or six-year-old child can take a real part in the conversation at mealtime. He should have a turn in telling his experiences. The other members of the family should try to make their conversation of some interest to the children as well as to adults. Talking *at* the child and talking *with* the child are two different things. The first should be avoided; the second, encouraged.

The importance of correct and clear pronunciation cannot be overemphasized, but too much nagging is useless. Example is the most effective method of teaching correct speech. The child will learn the kind of speech he most frequently hears among his family or playmates. An only child sometimes seems superior in intelligence because he has spent so much time with adults that he has acquired superior speech habits and a larger vocabulary. The child must distinguish and discriminate between the sounds of the words which he hears, as well as control his own vocal apparatus in making the speech movements. It is essential, therefore, to good speech that the words the child hears are pronounced slowly, distinctly, and correctly.

Some children talk too little. They may be stimulated to talk more by seeing more interesting sights to talk about, hearing more interesting sounds to imitate, or finding speech necessary in order to get something they want. Playing with other children encourages speech because a child must talk to other children in order to get help with his plans.

Children of the preschool age may talk too much for the

peace of their parents, but not for their own development. Their talking and thinking go on simultaneously. They frequently talk to themselves, planning out loud what they are going to do. They talk to others more or less without expecting an answer: "I'm going to put my dollie to bed. I'll wash her face first. I can wash my face, too," etc. Probably this freedom to talk in the preschool period is responsible for later adult facility in speech.

Occasionally, specific help with one of our difficult irrational words hastens the learning process. Training given before the child becomes confused by special difficulties, such as words which are pronounced the same but have different meanings is helpful. The parent or teacher should help him to distinguish similar and contrasting elements in such words and give him opportunities to use them correctly.

The Rôle of Questioning. — Questions are such a common form of speech in this period that it has been called the questioning age. These questions are often a nuisance to adults and frequently cause embarrassment by disclosing adult ignorance. Questions are immensely valuable not only in developing speech, but also in helping the child to understand the world he lives in. Sometimes they are about things that no man knoweth. When children ask such questions as "Who made the world?" and "Why are there people?" parents and teachers should reply with answers that do not belittle the eternal mysteries. Better an "I don't know," than a reply that bricks up with indifference or prejudice the first window a child opens toward the unseen.

Handling, looking, smelling, and listening give a wealth of firsthand sense impressions. But the child feels the need of supplementing these experiences by questioning. Great patience, simplicity, and accuracy in answering questions make an inestimable contribution to a child's education.

In addition to the questions which represent a sincere search for knowledge, children ask questions for many other reasons. Among these other motives for questioning are: an idle way of passing the time, social aggression, a game hav-

ing the elements of an antiphony, a means of getting attention, confirming something the child already knows, or giving him a chance to give the answer.

Stories. — Stories aid in the language development of a preschool child. Which stories are most interesting? Which stories contribute most to the child's development? To the three- and four-year-old, action and sense impressions are most interesting. The sights he sees, the substances he touches, the activities in which he engages, the sounds he hears are fascinating to him. The way a little child repeats new words over and over, and blows a horn interminably as soon as he has learned to do it, shows how intriguing his sensations and his activities are to him. These are the most suitable sources of content for his stories. Stories for young children, therefore, should be told in terms of action and sense impressions. Up to the age of six years a child is most alive to moving things — engines, boats, horses and wagons, animals, boys and girls in action. Children lose interest when the action is interrupted by a long descriptive passage. In telling a story one can notice the drop in interest during descriptive and explanatory portions, and the flare-up of interest again when the action is resumed. Since the young child's own activities and experiences are the ones most interesting to him, the first stories should be about experiences familiar to children. In telling a story about a journey by train to one group of Russian preschool children the teacher observed slight interest. In telling the same story to another group of children of the same age the teacher found keen interest. The difference was due to the fact that the first group had never been on a journey while the second group, who were refugees, had had experiences on trains similar to those described in the story. Stories about familiar experiences are valuable in helping children to interpret their experiences, to see more clearly the relationships between themselves and the things and people about them, and to help them to differentiate between fancy and reality.

Stories true to life should encourage sympathy and under-

standing of how others feel in certain situations. They show the kinds of acts which are approved and those which are disapproved. A child will frequently imitate those acts which he has observed bring satisfaction. Realistic stories also give children new suggestions for interesting things to do. Confusing the unreal, the strange, the nonsensical with the real makes an understanding of things as they are difficult for the four-year-old. Children do not appreciate the unusual until they are well acquainted with the usual. They do not see humor in the absurd until they are familiar with the aspects of ordinary behavior. This does not mean that stories must do nothing more than recount familiar experiences. They should begin with children's experience and add something to it, especially a new relationship among facts already familiar. The child has many isolated experiences which stories can tie together. For example, he drinks milk, he has seen cows, he sees the milkman deliver bottles of milk. These separate experiences may be related in a story showing where the glass of milk that he drinks comes from. He has seen seeds, plants growing in the field, and flowers and fruit. A story will show the sequence of events in the life of one plant.

Children in this period show keen interest in sounds. They like to have the animals in the story make their characteristic noises. They like to hear and imitate the sound of the engine, of the steamboat whistle, of the wind, of horses' hoofs coming down the street "clapperty clap, clap, clap," and similar familiar noises.

Rhythm and repetition also appeal to them. Rhythm makes Mother Goose popular even before the meaning of the verses is clear. The repetition of refrains helps to divide a story into simpler units — to furnish a breathing space, as it were, for the child to catch up with the action of the story.

There should be humor in these simple stories. Children find amusing a thing in an unusual place, such as a cow in a wagon, a wig on a pig. They laugh spontaneously at an unexpected collision, bumping into things, falling down, and surprises of various kinds.

Stories for preschool children do not need complicated plots. Their own experiences are series of incidents, and their stories may be built on similar lines. Complicated sentence structure is unfamiliar and confusing to children who have only recently learned to combine words into sentences, and whose sentences are still simple in form.

In the later part of the preschool period fairy and folk stories have their place. A short list of suitable books for the preschool period follows:

*PICTURE BOOKS FOR CHILDREN TWO
AND THREE YEARS OF AGE*

- BESKOW, ELSA. *Tale of the Wee Little Old Woman*. Translated from the Swedish by M. L. Woodburn. New York: Harper and Brothers, 1930. \$1 25.
- BRANN, ESTHER. *Bobbie and Donnie Were Twins*. New York: The Macmillan Company, 1933. \$1 00.
- CALDECOTT, RANDOLPH. *Hey Diddle Diddle Picture Book*. New York: Frederick Warne and Company, circa 1889. \$2 25, four parts each \$ 60.
- EISGRUBER, ELSA. *Spin Top Spin*. New York: The Macmillan Company, 1929. \$1 50.
- GAY, ROMNEY. *The Tale of Corally Crothers*. Cleveland: Harper and Brothers, 1932. 10¢.
- GRUGER, HERIBERT. *The Sing Song Book*. Illustrated by Johannes Gruger. Philadelphia: J. B. Lippincott and Co., 1931. \$2.00.
- LORD, ISABEL ELY. *The Picture Book of Animals*. New York: The Macmillan Company, 1932. \$2 00.
- MARTIN, MARY S. *The First Picture Book*. Photographs by Edward Steichen. New York: Harcourt, Brace and Company, 1936 \$1 50 (combines *The First* and *The Second Picture Books*)
- SMITH, E. BOYD. *Chicken World*. New York: G. P. Putnam's Sons, 1910. \$3.00.
- TOWSLEY, LENA. *Peter and Peggy*. New York: Farrar and Rinehart, Inc., 1931. \$2 50.
- WRIGHT, BLANCHE FISHER. *The Real Mother Goose*. New York and Chicago: Rand McNally and Company, 1916. \$2 00
- Linenette books published by Samuel Gabriel Sons and Company, New York (1927), such as *Four-Footed Friends*, \$ 75, *My Book of Wild Animals*, \$ 75, *The Railway Book*, \$ 75, *My Automobile Book*, \$ 50; *Little Red Hen*, \$.75, *Over Land and Sea*, \$ 75.

BOOKS FOR CHILDREN FOUR AND
FIVE YEARS OF AGE

- BANNERMAN, HELEN. *Story of Little Black Sambo*. New York: Frederick A. Stokes, 1900 (New edition, 1923) \$50
 ———. *Sambo and the Twins*. New York: Frederick A. Stokes, 1936 \$1 00
- BESKOW, ELSA. *Pelle's New Suit*. Translated from the Swedish by M. L. Woodburn. New York: Harper & Brothers, 1929. \$1 50
- BROOKE, LESLIE. *The Golden Goose Book*. New York: Frederick Warne and Company, 1906. \$3 00, four parts each \$75.
 ———. *Johnny Crow's Garden*. New York: Frederick Warne and Company, 1904 \$1 00 Reinforced, \$1 75.
- CLARKE, MARGERY. *The Poppy Seed Cakes*. Illustrated by the Peter-shams. Garden City, New York: Doubleday, Doran and Company, 1924 \$2 00
- COLEMAN, SATIS, and THORN, ALICE G. *Singing Time*. Decorations by Ruth Hambidge, New York: John Day Company, 1929. \$2 50
- DALGLIESH, ALICE. *The Little Wooden Farmer*. Illustrated by Theodora Baumeister. New York: The Macmillan Company, 1930. \$1 00
- DONALDSON, LOIS. *Karl's Wooden Horse*. Illustrated by Annie Bergmann. Chicago: Albert Whitman and Company, 1931. \$1 00
- FALLS, CHARLES B. *ABC Book*. Garden City, New York: Doubleday, Doran and Company, 1923. \$1 50
- FLACK, MARJORIE. *Angus and the Ducks*. Garden City, New York: Doubleday, Doran and Company, Inc., 1930 \$1 00
 ———. *Angus and the Cat*. Garden City, New York: Doubleday, Doran and Company, Inc., 1931. \$1 00.
- GREENAWAY, KATE. *A-Apple Pie*. New York: Frederick Warne and Company, circa 1889. (Later edition 1917) \$1 50.
- HADER, BERTA and ELMER. *The Farmer in the Dell*. New York: The Macmillan Company, 1931 \$2 50
- LINDBERG, MAJA. *Karl's Journey to the Moon*. New York: Harper and Brothers, 1927. \$1.50
- LINDMAN, MAJ. *Snipp, Snapp, Snurr and the Red Shoes*. *Snipp, Snapp, Snurr and the Gingerbread*. Chicago: Albert Whitman and Company, 1932 \$1 00 each.
- MILNE, A. A. *When We Were Very Young*. Illustrated by E. H. Shepard. New York: E. P. Dutton and Company, 1935 \$1 00.
- MITCHELL, LUCY SPRAGUE. *Here and Now Story Book*. New York: E. P. Dutton and Company, 1921. \$2 00. (Stories to tell children.)
- NICHOLSON, WILLIAM. *Clever Bill*. Garden City, New York: Doubleday, Doran and Company, 1927. \$1 00

- PETERSHAM, MAUDE and MISKA. *Miki*. Garden City, New York Doubleday, Doran and Company, 1929 \$2 00
- POTTER, BEATRIX *Peter Rabbit*. New York: Frederick Warne and Company, 1903 \$75.
- READ, HELEN S *Social Science Readers*. Particularly *An Engine's Story*, *Grandfather's Farm*, *The Airplane Ride*, and *Billy's Letter* New York Charles Scribner's Sons, 1928 \$60 each
- WHITE, MARGARET L., and HANTHORN, ALICE *Boys and Girls at School* Illustrated by Sue Rungen and Ruth Bennett. New York American Book Company, 1930. 40¢
- WILLIAMSON, HAMILTON. *Little Elephant* Illustrated by Berta and Elmer Hader New York Doubleday, Doran and Company, Inc., 1930 \$75

LEARNING TO THINK

The foundation of effective reasoning is accurate ideas of things and their relationships derived from firsthand experiences Visiting the market, the seashore, and the post office; handling, tasting, and smelling, — all these experiences and many others supply the stuff with which to reason. Helping children to discover similarities and differences and answering their *why* questions likewise help them to understand antecedents and consequences of events

The child's active work and play check the results of his thinking They give him irrefutable proof of the soundness or inadequacy of his conclusions He may reason that two chairs placed side by side will help him to reach the top of his playhouse better than a single chair, but when he places the chairs thus he finds that he is no higher than before He has tested his reasoning and found it fallacious.

Too much assistance interferes with a child's learning to think He will have no incentive to reason if his daily problems are solved for him. Accordingly, when he "strikes a snag," he should be left alone to devise some means of finding a way out for himself. The person who says, "Here are your blocks, Billy. Now build me a nice tower" is depriving the child of the opportunity to make his own plans and to decide which materials and methods he will need in carrying them out.

Reasoning ability is of many degrees of difficulty. Some

problems involving the combining of the essentials of two isolated experiences in order to reach a goal are too difficult for children below six years of age²⁰ This ability develops among children at widely different ages, and the time of its appearance varies with the mental age of the child. However, children as young as three years have the ability to use a simple form of rational learning.²¹ They increase with age and intelligence in this ability to complete a problem and to eliminate errors. The entire field becomes structured as a result of the first success. Experimental behavior in which hypotheses emerge and are controlled appears at about six years of age. It is therefore important to help nursery school children discover the rational organization of the learning problems with which they are confronted.

The ability to solve problems can be improved by training. At the University of Iowa twelve children who reacted to difficult situations or failure in immature ways were given over a period of three months, under supervision, opportunities to attack interesting problems suited to their individual abilities. As they learned to meet these situations, the difficulty of the problems was gradually increased. This training resulted in consistent improvement and a marked superiority to the performance of the group which had not received the training.

LEARNING TO REMEMBER

"Oh, I forgot!" The preschool child is not the only one who has occasion to say this, but he does say it frequently. Forgetting to do what mother tells him may be due to a number of causes. He may have been told to do too many things at once, instead of being helped to establish one or two habits at a time. Perhaps he has not been given sufficient practice in carrying out commissions and delivering

²⁰ Norman F. Maier, "Reasoning in Children," *The Journal of Comparative Psychology*, XXI (June, 1936), 357-366.

²¹ Virginia L. Nelson, "An Analytical Study of Child Learning," *Child Development*, VII (June, 1936), 95-114.

messages, very simple ones at first and more difficult ones as his ability to remember them increases. Perhaps he did not understand the message or command clearly in the first place because the words were unfamiliar, the sentences too complicated, or the whole spoken so rapidly there was no time for the meaning to "sink in."

"What did you see when you were out walking today?" "Where did grandfather take you?" "What did Aunt May do when the canary flew out of the cage?" Questions of this kind make a child feel he is contributing to the family conversation, give him a chance to organize his material, and teach him how to interest others by presenting his experiences in an effective way. They are incentives to remember discriminatingly.

Reading nursery rhymes and stories again and again encourages the child to memorize them. Pictures in story books suggest the stories that they illustrate, and thus give practice in recall.

An experimental study²² of verbal memory in thirty-one children ranging from two years, seven months to four years, nine months with an average chronological age of three years, eight months shows that children of these ages begin to supply words of stories told to them after one or two repetitions of the story if the story teller pauses at certain places for about two seconds. Children of four years, three months showed definitely greater ability in reproducing stories than younger children. The five children with an average age of less than three years seemed to approach "the limit of their learning (or their interest) by the seventh, eighth, or ninth reproduction."

LEARNING TO LIVE WITH OTHERS

Skill in getting along with other persons on a basis of mutual satisfaction is, for the majority of people, the most

²² Josephine C. Foster, "Verbal Memory in the Preschool Child," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXV (March, 1928), 26-44

important of all learnings. Mallay²³ found that some of the patterns of activity especially successful in establishing and maintaining social contacts were:

1. Regard and Parallel Activity: looking at another child while engaged in related activity, similar but independent. No vocalization occurs.
2. Regard and Co-operative Activity: looking at another child while engaged in related activity, interdependent and supplementing each other toward a common goal. No vocalization occurs.
3. Regard, Vocalization, and Parallel Activity: looking at another child while engaged in related activity, similar but independent. Vocalization does occur.
4. Regard, Vocalization, and Co-operative Activity: looking at another child while engaged in related activity, interdependent and supplementing each other toward a common goal. Vocalization does occur.

Mere visual regard of another child was almost certain to result in failure to establish social contacts. Between two and three years solitary play and parallel play predominates; co-operative play is relatively infrequent. Between three and five years, under good nursery school conditions, associative and co-operative play increase and solitary play decreases.

LEARNING NOT TO BE AFRAID

The conquest of fear in the later preschool period involves an active participation, on the part of the child, in the process of overcoming the fear. It involves also a positive response of interest or enjoyment in the feared situation instead of a mere passive absence of fear. The child must be brought into active and successful encounters with the thing that he fears. For example, a child who has overcome his fear of the dark might be expected to enter a dark room alone and get what he wants there without hesitation or perturbation. A child who is learning to overcome his

²³ Helena Mallay, "A Study of Some of the Techniques Underlying the Establishment of Successful Social Contacts at the Preschool Level," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVII (December, 1935), 435, 443

fear of high places is, at the same time, acquiring skills and muscular control. Learning not to be afraid is an active developmental process

The usefulness of this method of directing and aiding the child to learn ways of coping actively with certain fear situations was studied experimentally by Holmes.²⁴ Fear, as defined in Holmes' investigation, however, may not be identical with the psychologist's definition of fear. Furthermore, the same overt behavior observed in two children or in the same child at different times may be psychologically quite different, in one case involving profound organic reverberation and in the other case negativism or lack of curiosity or interest. As defined in Holmes' experiment fear means

a complete refusal to enter into the situation

or a

refusal to enter the fear situation until the experimenter had offered either to accompany or help the child²⁵

The twenty children participating in the investigation were between three and five years of age. The two fear situations to which the children were exposed were fear of the dark and fear of height. Each time the experimenter gave the child verbal reassurance and instruction in the skills required. The child was gradually familiarized with the fear experience and left it each time with a feeling of satisfaction. The actual directions given in each of these situations are of sufficient practical value to parents and teachers to be included here in some detail. At first, the child was expected to walk along an elevated board to a box of brightly colored toys at the far end. The directions were as follows:

a. Preliminary directions: "See how nicely you can walk across and get a toy."

²⁴ Arthur T. Jersild and Francis B. Holmes, *Children's Fears, Part III, An Experimental Study of the Fears of Young Children*. New York. Teachers College, Columbia University, 1935 (Summarized in *Child Development*, VII (March, 1936), 6-30)

²⁵ *Ibid*, p. 13

b Urging and reassuring [if the child hesitated] "You can do it, (name), . . . go ahead" If the child said, "I'll fall," etc., the reply was, "No, you won't fall, you can do it"

c Offer to accompany [if the child still held back]: "Then take my hand and walk across"

In the second setup a ball with which the child and the examiner had been playing rolled into a dark room. The directions this time were as follows:

a Preliminary directions "See where the ball went" (pointing to the open door). "Go in and get it and then we'll play ball again."

b Urging and reassuring. "It's in there You can find it Go ahead" If the child continues to refuse and it seemed evident that he would not enter the room, the examiner offered to accompany him

c. Offer to accompany: "Then we'll both go in and look for the ball" ²⁶

The procedure used in helping children to overcome their fear of the dark was as follows: When the child and the experimenter came to the door, the experimenter explained to the child where the light was and how he could locate it by the small phosphorescent pendant at the end of the chain. If the child still refused to enter, she said, "Then I'll go in with you and show you how you can find the light." They entered the room together and the examiner showed the child how he could feel his way along the screen and look for the little shining pendant which would help him find the chain. When he had done so, she let him pull the chain and turn on the light. She then asked him to turn off the light and watch the "little light" that shone in the dark. Then he turned on the light again and they played, for a few minutes, with several puzzles which the child enjoyed. Just before leaving, the child again turned out the light and the examiner said, "Now you'll know where to find the light the next time you come in You can remember that it hangs in front of the screen, and you can look for the little light at the end of the chain." In this way the child was taught a method of finding his way in a dark room; he

²⁶ *Ibid*, p 181.

became familiar with being in the dark, he actively participated in making the room dark; and he left what had been a pleasant experience with the positive expectancy that in the future he would be able to cope with any difficulties. The same procedure was repeated with slight variations until the child entered the room alone. Whenever the child found the light for himself, the examiner made some encouraging comment, such as, "That's fine. You found the light all by yourself, didn't you?" The same principles were followed in teaching children to overcome their fear of high places.

The results of this procedure proved very satisfactory. The children showed an active interest and co-operation and an evident attempt to utilize the instructions given. When they had acquired skill in dealing with the dark, they entered the room without hesitation or objection. Their pleasure in mastering the difficulties and in being themselves the cause of darkness and light was evident. A child whose parents had reported his fear of the dark in the home, learned to enter the experimental dark room in three trials. After he had succeeded in finding the light, he later said with a wide smile, "I know where the light is." When a desire to overcome the fear and the pleasure in accomplishing a previously difficult feat were absent, the aversion to the dark room was much more difficult to overcome.

The experience of parents²⁷ also indicated that this method of helping the child actively to cope with the fear-stimulus was superior to more negative methods, such as the avoidance of fear-arousing occurrences, warning, escape from the situation, reassurance, and explanation. Knowledge tends to cast out fear. Skills aid in developing children's emotional balance by minimizing the fear elements in their lives.

Emotional behavior, like other aspects of development, appears to be partly constitutional, partly learned. It is the result of general maturation of all behavior which makes

²⁷ Arthur T. Jersild and Frances B. Holmes, *Children's Fears*. Child Development Monograph No. 20. New York: Teachers College, Columbia University, 1935.

possible a more accurate perception of the situation and more discriminating responses

The specific reactions that give satisfaction may become generalized into what is loosely called "nervous" behavior. A neurosis, according to Adler,²⁸ is the preservation of symptoms to evade a difficulty. Even the smallest child soon tries various tricks with which to meet problems to which he does not feel equal. He uses the tricks that work. Guidance involves helping the individual to discover a better way out so that he no longer uses the trick which is the poorer solution.

THE RELATIONSHIP OF LEARNING TO PERSONALITY DEVELOPMENT

The acquisition of skills is closely related to the child's personality development. The effect on the child's social adjustments of the learning of certain skills has been convincingly demonstrated by several investigations. Koch²⁹ made a group of distinctly unsocial children more social by letting each child play with a more sociable child, using toys that encouraged co-operation. Jack³⁰ worked with five four-year-old children who seldom took the lead in securing materials, directing other children's behavior, criticizing them, or providing a pattern for them to imitate: in other words, children who did not pursue their own purposes against interference or attempt to direct the behavior of their companions. These nonascendant children were taught to make a mosaic design, solve a picture puzzle, and tell a story illustrated by pictures. The children were then returned to the nursery school with children who had previously been the more ascendant. Equipped with their new

²⁸ Alfred Adler, "Trick and Neurosis," *The International Journal of Individual Psychology*, II (Second Quarter, 1936), 3-10

²⁹ Helen Lois Koch, "The Modification of Unsociableness in Preschool Children," *The Psychological Bulletin*, XXXII (November, 1935), 700-701

³⁰ Lois M. Jack, "An Experimental Study of Ascendant Behavior in Preschool Children," in Jack, Lois M., Manwell, Elizabeth Moore, Mengart, Ida Gaarder, and others, *Behavior of the Preschool Child*, pp 7-65. *Studies in Child Welfare*, Vol IX, No 3, 1934. Pp. 171.

skills, the originally nonascendant children began to take the lead and markedly increased their ascendance scores. By increasing this one factor of self-confidence a marked change in behavior was effected. Page³¹ obtained further proof that preschool children as young as three years could be shifted from submissive or moderately ascendant behavior to more ascendant behavior by building up self-confidence. This was done by teaching them to tell a story, to make plasticine and wood flowers, and to solve picture puzzles. The materials were so arranged and the instruction given in such a way that the children, from the beginning, felt that they were succeeding. The training was continued until the child had mastered the skills involved. During the training period the children's self-confidence accumulated. When matched with untrained children the trained children showed an increase in directing behavior, and the untrained children a slight loss. At the same time they showed fewer attempts to secure materials by force. There was some evidence that the newly acquired ascendant behavior carried over into other nursery school situations. Without special training nursery school children appear to develop a fairly constant degree of ascendant behavior which decreases when they drop out of school. The methods and results of these experiments give most valuable suggestions to teachers and parents for the guidance of preschool children.

GUIDANCE IN LEARNING

Guidance is essentially guidance in learning. It consists of providing the kind of environment that will favor desirable modification of behavior. It consists of giving judicious approval at psychologically appropriate moments and information or suggestions that will help children to make the best response in a given situation.

It is recommended, in general, that suggestion be used instead of commands, praise rather than criticism, and that

³¹ Marjorie Lou Page, *The Modification of Ascendant Behavior in Preschool Children*. University of Iowa Studies in Child Welfare, Vol. XII, No. 3, 1936. Iowa City, Iowa: University of Iowa, 1936.

the commands or suggestions be positive rather than negative. These general rules of practical child training have been re-enforced by a number of researches. In one experimental situation ³² three-fourths of the children responded with obstinate behavior to negative commands but reacted favorably to positive commands. Three groups of children with different socio-economic backgrounds responded more favorably to encouragement and emphasis on success than to discouragement and emphasis on failure. The instruction,

"Blow this one [a balloon] up. It is easy. You can do it."

influenced more favorable performance than did the question,

"Can you blow this one up? It may be too hard."

Similarly, the encouraging comment,

"You almost did it that time."

was more effective than

"You haven't done it yet." ³³

Emphasis on an immediate objective, such as

"If you cut the ball out, you may take it home today."

was clearly more potent than emphasis on a postponed objective, such as

"If you cut the ball out you may take it home next week."

Suggestions, such as

"When I was downtown yesterday I saw some pretty red balloons.

I brought two home with me. They are in the paper sack on the table by the window."

was more effective than the direct command,

"Bring them over here."

³² Sue Cook McClure, "The Effect of Varying Verbal Instructions on the Motor Responses of Preschool Children," *Child Development*, (December, 1936), 276-290.

³³ *Ibid*, pp. 279-284.

A positive suggestion in the form of a question,

"Do you want to cut something out now?"

stimulated the children's activity more than the statement,

"We are going to cut something out now"

The appeal to one form of competition,

"Look at the man that — drew Can you draw a man as well as that?"

elicited less response, especially with the younger children, than the simple command,

"Draw another ball"

This detailed description of the procedure used in an experimental investigation may be supplemented by innumerable illustrations of effective instruction in the nursery school.³⁴ Guidance through instruction is most effective when it is given in connection with specific learning situations. Its function is to point out, or, better still, to help the child discover for himself better ways of doing things. At lunchtime, for instance, the teacher stays with the newly appointed child housekeepers the first day to offer

such suggestions as are necessary to keep the cups and food clean, to avoid spilling the orange juice, and to get the work done as speedily and with as few accidents as possible.³⁵

When naptime comes, the teacher may remark to a restless or noisy child, "It is time to go to sleep," or "You are disturbing —," or "Can you put yourself to sleep today?" In play situations the teacher may encourage a child to talk with others by listening attentively to his questions and conversation, asking another child to answer some of the questions, making it necessary for him to ask for the things he wants. A shy, reticent child may be encouraged to talk more by asking him leading questions, such as

³⁴ *A Manual of Nursery School Practice* by Iowa Child Welfare Research Station. Iowa City, Iowa: University of Iowa, 1934

³⁵ *Ibid.*, p. 36.

"Did you want to tell me about your new dress? Did someone give it to you?" ³⁶

Or the teacher may start a conversation with another child and draw the shy child into the activity and conversation. Habits of voice control are developed by casual comments made during the day. A child who is speaking to a playmate in a whining, fussing voice may be told to "talk to him in a big voice." A child who is shouting indoors may be reminded,

"John, you are so close to us that we could hear you just as well if you spoke in a soft voice. Try it." ³⁷

Other still more important emotional habits are built in the same way by helping the child to make acceptable responses in many concrete situations. These early years when the child is setting up patterns of response are the strategic time for making extremely important contributions to the child's mental health.

The form of instruction is not, of course, the only factor in determining the responses of preschool children to a learning task. The ease or difficulty of the task and its desirability from the child's viewpoint, the age of the children, and the personality of the children and the teacher all exert varying degrees of influence upon the learning process. No set of fixed rules is appropriate for all children. The total situation including the various factors mentioned above must be taken into consideration in studying the effectiveness of a given kind of instruction for a particular child. But too much solicitude, too much advice, and too much interference with his play, with his imagination, with his own way of thinking through a problem should be avoided.

QUESTIONS AND PROBLEMS

- 1 Outline what you consider the best procedure in teaching a preschool child to (a) hit a target with a ball, (b) improve his language

³⁶ *Ibid.*, p. 46.

³⁷ *Ibid.*, p. 47.

ability, (c) play co-operatively with other children, and (d) solve problems within his level of comprehension

2. Show how the external environment, the child's native capacity, his previous experience, and instruction and guidance enter into each of the above learning situations.

3. Give an illustration of learning that took place apparently as a result of sudden insight rather than as a result of trial and error. Was repetition with satisfaction a factor in this type of learning? Was any influence of previous experience observed?

4. Give an example showing how repetition of an act with satisfaction results in learning.

5. Think of a number of bad habits which you have observed in preschool children, and suggest ways of changing each habit.

6. Observe a child while he is learning to open a box, button his coat, lace his shoes, etc., and note what started him in the activity, what he does if he has difficulty, how many trials are needed for success, how he acts when he succeeds.

7. Illustrate from your experience with children the two principles of recognizing their level of maturity and setting the stage for effective learning.

8. What appears to be the most effective method of overcoming fears?

9. Find examples of parents or nursery school teachers depriving children of opportunities to solve their own problems.

10. Give the experimental procedures successfully used in helping preschool children to acquire self-confidence.

11. Briefly describe a four-room house and a yard that are quite suitable for a child. Describe a larger, more luxurious house and yard that are unsuitable in a number of ways.

12. Spend as much time as possible in a nursery school, studying the children and the way in which the teacher contributes to their development. Later, if possible, take care of two or more children for an hour or more a day, applying the principles and procedures you have learned.

CHAPTER XI

SPECIAL PROBLEMS OF THE LATER PRESCHOOL PERIOD

A very real problem is that of overemphasizing children's difficulties in sleeping, eating, and the like. Overattention may be worse than no attention. Some difficulties are caused by too much training, while others are caused by lack of training.

Some problems of nursery school children are more significant for personality development than others. Blatz and Griffen¹ found in comparing the case histories of sixty maladjusted children less than six years old with sixty apparently well-adjusted children of the same ages that faulty bladder training, sleeping difficulties, inadequate development of self-assertion and self-negation, and unsuitable home discipline were commonly associated with maladjustment, but not with good adjustment. Thumb-sucking, nail biting, other habit tics, and delayed speech seemed to affect the total personality less than the factors just mentioned. What is problem behavior to an adult is frequently the child's sincere but ineffectual attempt to find a way out of a difficult situation. Much of the behavior which the adult considers anti-social in a child is due to his lack of experience and skills.

It has always been a mystery to parents why one of their children turns out good and the other turns out bad, or in other words, why one child develops one kind of behavior and the other child a quite different pattern in what appears to be an identical environment. Actually, however, there is no such thing as an identical environment for any two individuals. Each child stands in his own individual, dy-

¹ W. E. Blatz and J. D. M. Griffen, *An Evaluation of the Case Histories of a Group of Pre-School Children*. University of Toronto Studies, Child Development Series, No. 6. Toronto: University of Toronto, 1936.

namic relationship to the general family situation, to the persons in that situation, and to the influences that enter into the family life from the outside. Differences in age, sex, and position of birth make for variations in the environment of the various children. Parents' attitudes toward each child change with changes in the economic conditions of the family, the parents' own age and changing interests, their desire for additional children, changes in their philosophy of discipline, and many other factors. Of three children, the first aggressive, the second dependent, and the third having emotional difficulties and unco-operative habits, the first, according to Hattwick's results,² is likely to have received too little attention; the second, too much; and the third, to have come from a home characterized by tensions and conflicts. The parental attitudes that seem to have the most unfavorable effects on the personality development of children are rejection and overprotection of the child. A child may be unwanted because he came at an inopportune time, because he is not of the desired sex, because he does not fit into the family pattern, as in the case of a dull child in a gifted family or a phlegmatic child with an energetic parent. This underlying rejection of the child may be expressed in oversolicitude, overattention, or nagging. Overprotection may result from the recognition of the real hazards of modern life, from the previous loss of children, from ambition on the part of the parents, or from their effort to have the child satisfy serious emotional lacks in their own lives. Even though these parental attitudes are not expressed verbally, they may be transmitted to preschool children in subtle ways.

NAGGING

It isn't only parents and teachers who nag. Some preschool children become adept at nagging their parents for things they want. Such behavior is, of course, encouraged

² Berta Weiss Hattwick, "Interrelations between the Preschool Child's Behavior and Certain Factors in the Home," *Child Development*, VII (September, 1936), 200-226.

by the parent who finally gives in and lets the child have the thing for which he was teasing. Nagging is discouraged by the parent who remains firm — even when there's company and the child is making of himself "a perfect nuisance." The latter method is the only way that the child will learn that teasing is of no avail in getting what he wants. The child will learn to do whatever secures for him the thing he wants. If he gets it by teasing, screaming, or whining, he will learn to behave in these undesirable ways. If he gets what he wants by making his request in a pleasing way, by being patient, and by working hard for it independently, he will tend to behave in these desirable ways.

SHOWING OFF

A child who "shows off" has been taught intentionally or unintentionally to act in this way. He has performed some little stunt, and people have exclaimed, "How cute!", "How bright!", "How cunning!" In this way the child's attention has been directed toward himself rather than toward the thing he is doing or the pleasure he is giving by his performance. After he has made his contribution to "the gaiety of nations," the adults or children in the room should say, "Thank you, that was very interesting" or "That was lots of fun, thank you." Then the child should be willing to take his place as part of the audience and enjoy what someone else says or does. He should have practice in the roles both of performer and of audience. It has been found that children who have been in the habit of playing games with adults and assisting them in their daily work are unusually free from the tendency to seek the center of the stage in social situations.

EXCESSIVE CRYING

Small children cry easily. Tears are sure to occur occasionally. But the normal state for a child is happiness and wholehearted absorption in his activities. If a child habitually weeps over nothing at all, the mother should try to discover the situations that make her child cry. Children

frequently cry when their property is taken away, when they are left alone in a room, when they are working at something too difficult for them, when other children or adults refuse to play with them or look at what they have made or what they are doing, and when they are getting dressed or undressed, especially in winter clothing. Sometimes children being given mental tests will suddenly push the testing materials from the table and burst out crying when the exercises become difficult. As long as they can pass the tests readily, this reaction does not occur.

After the mother has discovered the probable causes of the child's crying, she may study the ways in which some of these causes can be eliminated, others, which are the result of poor previous training, may be gradually modified by re-education along specific lines. She should demonstrate how unavoidable causes of pain and disappointment may be met bravely, at the same time giving him assurance of her sympathy and understanding.

The physical condition of the child is of primary importance in preventing excessive crying. A well child is usually, with the exception of a few unavoidable ups and downs of life, a happy child. Physical defects, irritation, fatigue, pain, or general weakness will usually be discovered in the child who cries a great deal.

When crying is unduly frequent, especially beyond three years of age, the causes may be traced to oversolicitude of parents, supersensitiveness, or lack of ability to profit by experience.

TEMPER TANTRUMS

Adults have had sufficient experience with violent emotions to recognize to some extent the panic which a little child must feel when he is, as it were, seized by the overwhelming physiological disturbances of anger and fear. They will, accordingly, do nothing to aggravate the intensity of his emotion. The child needs help in learning to control the situation in the beginning when the release of energy can be harnessed to active efforts to overcome the difficulty.

rather than later when it is dissipated in chaotic responses. Perhaps the most effective way to deal with a temper tantrum once it is under way is to isolate the child from the rest of the group. He should be told that he is annoying the rest of the group and will be left alone for a while to get control of himself. He should not be touched if this can be avoided, for seizing hold of a child, shaking him, or restricting his movements in any way gives him another cause for protest. Isolation at the time and helping the child to find adequate ways of behaving in future situations are the wisest methods to use. Anger continually aroused by one person may seriously warp a child's whole development.

As has been emphasized so frequently, any physical causes of irritation or general fatigue which predispose to anger should be detected and treated. Sufficient sleep and rest, regularity in the daily schedule, avoiding overexcitement, and other health habits help to prevent anger.

To summarize, temper tantrums are discouraged by:

1. Never making the child's temper the center of attention.
2. Never letting the outburst create any noticeable excitement.
3. Never giving him the thing he is screaming for or bribing him to stop by giving him candy.
4. Keeping calm when the child is excited, and unemotional when the child is emotional.
5. Making the child feel that he is accepted even though his behavior is disapproved.
6. Helping him to acquire the knowledge and skills necessary in order more effectively to meet new situations involving thwarting.

For extreme cases, the child should be treated as a sick child, and be given a tepid bath and put to bed in a darkened room.

The practice of flying into a rage at the slightest provocation cannot be blamed on hereditary tendencies alone. "He is hot-tempered just like his father," mothers sometimes say of the children who are quick to wrath. It is true that a

general nervous excitability may be inherited which makes certain children oversensitive to irritation. Such children are special problems in emotional training. The preceding suggestions apply to them as well as to the more stable, stolid children, but special care should be given in their case to maintain the best possible physical condition and to avoid overstimulation, unnecessary irritations, and thwartings.

MASTURBATION

The habit of masturbation (sometimes called self-abuse) too often calls forth too much perturbation on the part of the parent. This habit is frequently found in nursery schools among three- and four-year-old children, and is even more prevalent in kindergarten. The older view was that masturbation was a highly abnormal and dangerous habit, leading eventually to insanity and depravity. The new view is that it is very common among normal children and is not dangerous. The most helpful suggestions for the prevention and treatment are:

1. Avoidance of irritation and rubbing of the parts by too tight or poorly fitting clothing.
2. Careful cleansing of the parts. Circumcision of boys is frequently needed to make cleansing easy.
3. Avoidance of intense emotional excitement.
4. Avoidance of too much warmth in sleeping.
5. Getting up in the morning promptly after awakening.
6. Recognizing the child's concern over his genitals and helping him to acquire a wholesome attitude toward the problem and to utilize this legitimate interest constructively.

Punishment is most unwise because it increases the emotion connected with the habit and drives the child to secrecy, to a feeling of guilt, or to resentment against authority.

LEFT-HANDEDNESS

In a previous chapter the suggestion was made that unless a child is naturally left-handed, he be consciously taught to use his right hand during the first year when preference for one hand is being acquired. If that is done, he may start

eating, writing, throwing balls, and engaging in other everyday activities with the right hand instead of with the left. Authorities seem to agree that no attempt should be made to change a persistent tendency to use the left hand, especially after the second year, except under the direction of a specialist. If the habit of using the left hand is firmly fixed when the child reaches school age, a great deal of nervous strain and possible danger of interference with speech is involved in making the change from left-handedness to right-handedness. Since left-handedness is for most people not a serious handicap socially or practically, the acquisition of right-handedness after the habit of using the left hand has been firmly established is not worth the trouble and the harm that might result

ENURESIS (BED-WETTING)

If a child has not formed the habit of being responsible for bladder control by the third year, he should be examined by a physician to detect physical causes. He should be praised whenever he is successful in keeping dry during a day or a night. When he fails, he should be given the responsibility of mopping the floor and changing his clothes. Enuresis may be part of a general nervous state. Scolding, speaking in a harsh tone, shaking the child, showing anger or excitement would aggravate the condition. Fear as a motive should be avoided. His attention should be called to the advantages of control. Some regulation of the diet — such as avoiding spicy foods, meats, fluids, concentrated sweets and strong-flavored vegetables in the evening meal — may help. A quiet period before bedtime is advisable. Sleeping in a cool room in sleeping garments made so that the hands cannot go inside proves helpful in cases where enuresis is closely associated with masturbation.

The child should not receive undue attention when performing any bodily functions. The child's new habit systems should be established naturally in his immediate environment. In establishing any of the fundamental routines the need for detailed analysis of the child's environ-

ment is evident. Habit-training is essentially a way of incorporating the culture into the child, and may have profound significance for personality.

OWNERSHIP

Learning the accumulated customs regarding private property involves many fine distinctions which should be acquired gradually. During the second year a child may be taught to leave certain objects alone, such as mother's drawer, father's books, the cat's tail, the flowers in the garden that should not be picked, and the vase on the table. By the end of the second year he should understand the difference between yours and mine in many specific instances. A sense of property rights develops rapidly in the next few years if the child plays with, entertains, and visits other children. Disputes as to ownership are sure to occur. Jack takes Polly's ball and will not give it to her. What should be done? Take the ball away by force? This is the quickest method of restoring the ball to Polly, but it arouses anger in Jack and does not educate him constructively in the idea of property rights. Jack's attention may be called to one of his own toys saying, "This is yours, Jack. The ball is Polly's. Her mother gave it to her. She wants to play with it." If he refuses to give it up, he may be left alone with the comment, "People do not like to be with children who take other children's balls." This treatment will attach social disapproval to his act, especially if Polly and the other children go off to play a very interesting game together. Children can teach each other the meaning of ownership better than adults can. A child who has opportunity to play with other children of his age will soon learn to distinguish between "mine" and "thine." An occasional suggestion from an adult will help to make the distinction a little more clear, definite, and generalized.

Making or working for his possessions heightens the child's sense of ownership of them. Knowing that a certain object was made or earned by another child increases his respect for the right of the other child to possess it.

RUNNING AWAY

Almost as soon as the toddler can run, he begins to run away. There seems to develop in the child of one to two years of age a desire to go the other way when he is asked to come to a person. If the child is in no immediate danger, he can be patiently called back. One mother applies the method suggested by Terhune in training dogs. She calls, "Come, Johnny, come," with all gentle variations in a calm voice, until he comes. It may take anywhere from thirty seconds to fifteen minutes, but it seldom takes more than two experiences if the child is greeted enthusiastically when he does come and told what a big child he is to come when mother calls him. From the time he is two or two and a half years old, he becomes a source of constant anxiety to his mother, because running out into the streets or woods is dangerous for one of his limited experience of the world. Parents treat these young runaways in a variety of ways. Some pursue and spank the culprit, others tie him to a tree with a rope long enough to allow a considerable radius of activity. The child, however, needs experience in exploration in order to develop ideas of spatial relationships and a sense of direction, and to satisfy his desire for adventure. One mother let her child trot off wherever he wanted to go and followed after, not in pursuit, but just to see where he went. In a little over a week he had satisfied his curiosity and preferred to stay at home with his playthings, which proved more interesting than anything he had found in his wanderings.

"HE WON'T EAT THIS AND HE WON'T
EAT THAT"

Prevention of Food Fads. — Sometimes feeding problems become acute in the preschool period. Prevention of food fads should begin in the first year, when new foods are gradually introduced, a half-teaspoonful at first. Each new food should be very carefully cooked to prevent disagreeable associations. Spinach, for example, should be washed free of

sand, cooked ten or fifteen minutes, finely chopped, seasoned with salt and butter, and garnished with a spoonful of crumbled egg yolk on top, if desired. Any new food should be introduced on a day when the child is feeling reasonably jolly. The rest of the family should openly show their enthusiasm for wholesome food. A reasonable portion of the food should be put on the child's plate, and no direct reference to his eating should be made. If such a course has been persistently pursued, the chances are that the child will eat his food as the others do. Lack of appetite is very common in certain well-to-do groups; relatively rare among country children.

Writers are increasingly emphasizing the study of the individual child with respect to his eating habits and the need for allowing him some freedom of choice, maintaining that doing so eliminates a major cause of food refusal. Attention should be given to individual differences in this as well as in other aspects of child study and guidance. Specific practices that in individual cases are reported to be effective are: consistency; a pleasant, cheerful, matter-of-factness and high expectancy that the child will eat well; opportunity for freedom of choice; removal of pressure; good parental or adult example; help with the mechanics of eating in order to preclude strain; avoidance of discussion of the child's eating habits in his presence; avoidance of overfeeding — considerable reliance upon appetite as a guide; an extra smile or word of approval³

The parent or nursery school teacher should consider the whole situation rather than attempt to apply specific rules. He should not fear being inflexible so much as building resistance.

Overcoming Bad Feeding Habits. — More difficulty is encountered when bad eating habits have gained headway. One child teases for tastes of all the foods the adults are eating. Someone at one time began giving him a taste of

³ Gertrude Borgeson, *Techniques Used by the Teacher in the Nursery School Luncheon Period* New York Teachers College, Columbia University, 1937

this and a taste of that. This practice weakened the association between sitting at the table with adults and eating only the food that is suitable for him. Probably adults would be healthier if they ate the same food as the children, but in most cases they do not. If the child, therefore, eats at the grown-ups' table, he must have the habit of being content with the food from which he may make his choice. It is probably better for preschool children to eat at a little table by themselves, except on special occasions.

Refusal of food may be, in some cases, a device for gaining attention or of defying authority. It arises in the struggle for power when the child discovers the effectiveness of finickiness as a means of controlling the situation. This problem can be solved only if the parents understand the significance of the child's behavior and give the child the necessary basis of security.

Sometimes children refuse to eat at mealtime — no cereal, no eggs, and above all no vegetables! Children who constituted a "feeding problem" were found to have diets higher than the average in carbohydrates and lower in eggs and fruit. About 35 per cent of the cases showed a resemblance between the food aversions of the parents and those of the children and a still greater resemblance among the food dislikes of the children in the same family.⁴

In handling the problem of food refusals, coaxing is usually ineffective. A study of the feeding problem with relation to the whole situation should be made. Such a study led to a satisfactory solution in the case of a child who, at about nine months, refused solid food. Urging was ineffectual. Because he had always had an adequate supply of milk, his hunger was satisfied without solid food. A study was made of the solid food the child liked best, and this was given to him the first thing in the meal, when he was hungry after having had nothing between meals. Scolding is bad physiologically as well as psychologically. To correct

⁴Dorothea McCarthy, "Children's Feeding Problems in Relation to the Food Aversions in the Family," *Child Development*, VI (December, 1935), 277-284.

this bad habit Dr. Frank H. Richardson⁵ advocates the following procedure. Small portions of foods suitable for the child are put on his plate. He is required to sit down at the table promptly for each meal. There is to be no word of reproach or command; not the slightest effort should be made by any of his elders to induce him to eat. At the end of thirty minutes he is to leave the table "whether he has eaten much, little, or nothing." The length of time before he begins to eat under this new regime varies with "the determination of the child, his knowledge of the perseverance of his parents, and the degree of appetite perversion that had been wrought by the course previously pursued. It may safely be stated, however, that the cure is usually well on the way long before the conclusion of the second day. Aldrich⁶ gives a "sane, honest, and highly practical" analysis of the psychologic and physiologic factors in this common disorder — lack of appetite.

DISOBEDIENCE

What can a person do when a four-year-old says, "I won't"? Should father say, "I guess you *will* do what I tell you to," and follow this statement with a spanking? Should mother say, "Please darling, do as mother says"? Should the "I won't" settle the matter and nothing further be done? The response which should be made to "I won't" depends on the immediate command, and on the physical condition and previous training of the child, in fact, on the total situation. If "I won't" places the child or someone else in a position of danger, the treatment must be prompt and effective. If the request is one that the adult himself recognizes as unreasonable or unjust, he should be big enough to acknowledge his mistake. If the child is greatly fatigued or ill, he should be treated as a sick child.

Perhaps he gets too many orders. Is the "bone of conten-

⁵ Frank H. Richardson, "When a Child Refuses to Eat," *Children*, II (January, 1927), 9-10.

⁶ Charles Anderson Aldrich, *Cultivating the Child's Appetite* New York: The Macmillan Company, 1927

tion" one of a few essential commands? Giving orders continually about every little thing encourages a disregard for all of them. Perhaps the fault is in the command itself. Is it a reasonable request? Telling a child "to keep still" or "to keep quiet" for a long time is not reasonable. Is obedience to the command within the child's power? To tell him not to touch a plate of freshly baked cookies is to set up a temptation almost too great for his stage of development. Perhaps the fault is in the way the directions are delivered. Are they spoken simply, slowly, and distinctly? Disobedience may be due to misunderstanding. Many words are still unfamiliar to the preschool child. There would be much "disobedience" among adults who had studied French in an American high school if commands were given to them in Paris in the lilting, rapid French manner. Has the child's attention been secured before the directions are given? Sometimes the child is so entirely engrossed in his activity that he does not hear the request. Is the command made reasonably attractive? Does it fit into his scheme of things? A reason for obeying it, an advantage to be gained in doing it, an enthusiasm for the task shown in the voice and in the wording of the request help to put the child in a state of readiness to make the response which the adult desires.

Perhaps the fault is in the way disobedience to commands has been treated on previous occasions. Has disobedience to carefully considered requests been associated with dissatisfaction? Have threats been made and never carried out? Have bribes been offered for acquiescence? It is a dull child who will not try continually to drive a better bargain. Does the person disobeyed "go up in the air," thus entertaining the child with an exciting dramatic performance? Is obedience to certain commands consistently insisted upon, or is the child forced to obey one day and allowed to have his own way in regard to the same command the next day? If the child has no way of knowing with certainty how his mother or father will take his actions, he cannot be expected to give consistent obedience.

Perhaps the fault is in the personality of the parent or

teacher. If the adult is genuinely disliked, the child tends to take a negative attitude toward everything which that person asks him to do. Attempting to rebuild confidence and good fellowship is the first step toward winning obedience. An adult who is always oppressively right and says, "I told you so," is likely to arouse antagonism of an unreasonable but very human type.

The mother may be irritable because she is busy and worried with many things. Better management of the home might help. If the housework is more efficiently planned and executed, time can be saved so that the mother will have opportunity for the rest and recreation she needs for developing a personality which will make a favorable impression on her child.

Perhaps the fault is in the environment of the child. Are there plenty of interesting things for him to do, things suited to his capacity, safe, and not annoying to anyone else?

For Satan finds some mischief still,
For idle hands to do.

A child who is interested in desirable activities is not so likely to do the things that are prohibited. Are the objects in the environment that most often cause disobedience absolutely necessary? It is natural for a child to want to handle and play with the things he sees. There are enough rules in the ordinary routine of living to which he must acquiesce—rules about food, sleep, and avoidance of danger. Unnecessary restrictions, therefore, should be avoided. Emphasizing his rights—the things in the environment he may touch and use—helps to avoid the feeling of too much prohibition.

Perhaps the child is tired or irritated about something else. There is sometimes a diffusion of discontent that accounts for specific negative reactions.

Most fundamental of all is the concept of obedience. Fifty years ago obedience to authority was the first law of education. Children were expected to do the tasks set for them whether or not they understood the reasons for them. Today

the best development of every child is the goal, discipline is considered as part of the developmental process. Thus considered, discipline merges with child study and adjustment, with guidance, with the individualization of education, with mental hygiene. Freedom with responsibility is the ideal.

An autocratic idea of control usually results in one of two types of child—an oversubmissive child who does what he is told but shows no initiative, or a rebellious child who constantly is waging war against authority. Punishment is something to be administered with the future—not the past—in mind. It should be considered from the standpoint of its effect on the child, not from the standpoint of the annoyance or expense caused by the act. Excellent results are observed in children's conduct when "good" behavior is given approval. "Bad" behavior can occasionally be overlooked, or at least the proportion of scolding given can be reduced in favor of emphasis on approval of "good" behavior. Some parents have reduced the proportion of disapproval to approval with obviously satisfactory results.

THE ONLY CHILD AND THE OLDER CHILD

A child's reactions to the circumstances of his birth order may vary in an extremely complex manner.⁷

Each child and each adult has his own difficulties in settling into the group in which he finds himself. Part of these difficulties are due to his own make-up, part to his age and the resulting conflicts between his desires and familiar and social demands; part to the peculiarities of others, divergences in temperament, and the unique relationships existing in the group, and part to the expectations members of the groups have for the individual. Accordingly, despite popular opinion to the contrary, it is impossible to draw a consistent picture of the only child. It is clear, however, that the only child is not necessarily handicapped. The only child might

⁷ Harold E. Jones, "Order of Birth," in Carl Murchison (Editor), *A Handbook of Child Psychology* (second revised edition), p. 585. Worcester, Mass.: Clark University Press, 1933.

have a harder time if the reason for having only one child is because the parents do not care much for children. On the other hand, he may have the advantage of less financial pressure and a greater feeling of communion with his parents.

There is evidence that it is the first-born child in a family who needs guidance the most. In a kindergarten group⁸ those children who were the oldest in their families showed a significant tendency toward lack of aggressiveness, "a low rating in self-confidence, a lack in qualities of leadership, and greater than average suggestibility." The only children, on the other hand, appeared "more aggressive and more self-confident than any of the other groups." They were also "highly gregarious in their social interests." The causes suggested for "the greater proportion of extreme deviation from the ideal norm" in the case of the oldest children are:

the comparative inexperience of the parents in the case of the first-born child, possible overstrain as a result of the many small tasks, including care of the younger children, which often fall to the lot of the oldest child in a rapidly growing family, and the frequently difficult adjustment which is involved in the change from the "only-child" to the "not-only-child" situation.⁹

The practical conclusion drawn was that each individual child in the family has his own special problems of adjustment, and that

it is our task to study these problems, to ascertain the nature of the conditions under which each is likely to develop, and to find means for modifying these conditions in accordance with individual needs.¹⁰

The only child is perhaps more in danger of excessive parental affection and lack of the give-and-take that comes from close association with other children. On the other hand, he is likely to have an excellent vocabulary for his

⁸ Florence L. Goodenough and Alice M. Leahy, "The Effect of Certain Family Relationships upon the Development of Personality," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXIV (March, 1927), 45-71.

⁹ *Ibid.*, p. 70.

¹⁰ *Ibid.*, p. 70.

age, do better in school subjects than other children, and resist suggestion to a greater extent.

To summarize, problems should be viewed as a kind of development and understood and treated in terms of their causes. Even happy, secure children have problems which result from conflicts between their individual growth needs and the social pattern. Other problems should be solved by making the child feel happy, secure, responsible, and aware of his importance as a useful member of the group.

QUESTIONS AND PROBLEMS

1. Keep a record of some special problem of a preschool child, noting in detail the situations in which the child shows the undesirable behavior, each time it occurs, the way other people respond to the child, and the child's responses to the treatment he received.

2. List other special problems of children of these ages which have come to your attention. Study some of the references at the end of this section in order to get suggestions for dealing with some of these undesirable paths of development.

3. Explain nagging, temper tantrums, showing off, and disobedience in terms of the psychology of learning.

4. Give illustrations which you have observed of poor management of preschool children, and describe better ways of dealing with the situation

5. Study Thom's suggestions for treating problems of this period, in his book, *Everyday Problems of the Everyday Child*.

6. Recall some problem of your own childhood and how it was handled. How would you handle a similar situation now?

CHAPTER XII

SUGGESTIVE FAMILY SCHEDULE

A carefully developed routine helps children and parents to avoid cluttering their day with an infinite number of unnecessary choices. It reduces conflicts and frustration.

One of the problems in making a daily schedule for a child two to six years old is to have it synchronize with the schedules of the baby and of other children in the family. On pages 257-261 is a schedule planned for families having children of different ages.

If possible, a schedule should be planned which can be carried out under ordinary circumstances in three-quarters or less of the allotted time. Otherwise it will be overloaded and the mother cannot keep up with it. There are inevitable interruptions in any work at home, and there are times which should be devoted to relaxation. A schedule which can be followed allots at least one-fourth of the total time to such expected and unexpected items.

Husband and wife and children may well work out the schedule together. There will then be no need for adventitious awards, as bribes. Children will be sufficiently interested in helping to carry their share. There is no place like a home for the real development of democratic co-operation, since the family starts well ahead of other institutions in its growth toward the ideal of considering each individual as important and valuable. All schedule-planning done together tends to be more practical; but better yet, it puts interest where interest should be, shows up the difficulties of the group members, and teaches each the problems which others in the group face.

Democracy in planning is the ideal. In execution, division of labor is efficient, and should be the rule. This means that individuals are responsible for the tasks dele-

gated to them by the democratic planning, from tidying rooms, and school work, to supervision, teaching, and checking. For example, there cannot be a democratic council before each meat order goes in, but plans for future meat orders can be discussed at the regular time.

The individual to whom supervision is delegated needs certain rights and authority because of his office. These must be respected for as long as the power lasts. It is easier to agree to supervisory demands if each one recognizes the need for the office even if an incompetent person fills it.

In the families of recent past, mother and father were bosses in specific clear-cut fields; the children were apprentices learning how to work as the parents did. In our changing family organization we need to make plans for shifting functions for each member of the family.

Fathers have not regained their position of working importance and personal service in families. It is very true that in many families they are considered necessary nuisances whose arrival home upsets the continuity of a satisfactory plan. Most fathers need not be so treated. They have their contributions to make to family living.

First of all, each father is an individual member of the group, whose needs, likes, and dislikes are to be considered. If he likes his clothes left alone, likes the living room tidy but never sees dust, likes chocolate cake and hates soufflé, comes home in need of quiet and is ready to romp roughly as soon as he is fed: all these items and many others may well be considered in plans.

Then, the father is another head who can help to plan the family program. He can help to put items in order of importance and he will be more sympathetic to occasional lapses which will occur when the unexpected floods the schedule out of sight. His contributions to plans may be tried whenever practicable even when he cannot help work them out.

Finally, fathers are proving themselves more useful and more happily occupied than ever before at many home duties. Contacts between father and child from the infant's

birth are vitally needed by both. Differences in treatment are needed by the child who may too easily learn to be adjusted to only one method, the mother's. Differences in treatment may relieve the mother of her morbid belief that only one way is the right way. The father grows in importance when he is seen to contribute to immediate work and happiness in the home group. A busy father cannot do too much around home, but he can be more than a star boarder, or a fair-weather humorist. His steadiness and emotional freedom from any petty mid-day irritations give him a fresher viewpoint that the family needs, especially at the full hours around supper and bedtime

Week-ends may be father's best time, the period when he can really play and teach. As learning goes on for children in an environment which stimulates them, it is not necessary to have assigned lessons. Working together on routine, on planning, on constructing, and on expeditions gives the child much that school cannot give. It lets the child know that he belongs, that he counts, that he is responsible; it teaches him technics and lets him know what his parents think, and why.

For the mother the hardest part of caring for infants is the feeling of twenty-four hours a day responsibility. If, as the responsible person, she knows that there are substitutes willing to help out, as father, older children, employee, relatives, or neighbors, there is feeling of freedom which lightens the burden of responsibility, even when substitutes are not called.

Since it is probable that infants under two take personal attention and make work up to a total of six to eight hours a day, it is obvious that one person caring for such an infant and doing the regulation housework load of four hours daily will have his or her hands very full: it is probable that in many instances the schedule under the heading of "adults" will have to be carried by an individual assisted by the part-time or full-time help of one or more others. If this is not feasible, the possible contributions of commercial laundries, restaurants, bakeries, canned food, and the neglect of house-

work formerly considered essential should be discussed by schedule makers. Such helps may make for sloppy house-keeping, or may be safeguards for more important work. That is, they may be treated as last-minute emergency aids when bad planning leaves gaps, or they may be used in original plans for their true value. It is possible to turn out an edible balanced meal in twenty minutes of concentrated effort, with the use of plans and cans. Yet tables set well add to joy of living, and do not take much longer.

Plans should utilize charts and lists wherever possible. It is inefficient to order more than once a day, and it is possible to order only once or twice a week. Meat orders for a week can be put in on Monday morning, grocery orders lumped on one day, or ordered to be brought throughout the week. Charts should be made of seasonal needs, and of weekly schedules for home jobs. Lists of needs should be kept about two weeks ahead so that advertised bargains can be used. If each item is listed as "needed" when there is still about two weeks' supply ahead, it saves much waste motion trying to get it in a hurry at the last moment.

In line with these practices, is the reversion of many to an old New England practice of reduced work on the Sabbath. If noon and evening meals on Saturday are planned to have portions left to be served cold or re-heated on Sunday, it will save effort for mother, and give a much-needed break.

The suggested chart (see pp. 257-261) makes no provision for social activity of adults nor for illness. Social activity will have to be introduced according to family and individual standards. Illness turns any schedule into a scrap of paper unless emergency help can be used.

Child responsibility should be used, although doing this is hard on the parent as teacher at first. Teaching can be used as a game with children of preschool age; Saturday and Sunday can be used as practice for school children followed by a special celebration when the scheduled work is completed.

Contributions to planning and work are to be expected of children. They are happier when they feel responsible,

and less given to whining when there is a regular schedule whose value they recognize

Attitudes toward payment of children, and ability to pay vary. Some parents believe a child should have neither pay nor allowance, but get the money he needs as the parent sees fit. Other parents give an allowance but no pay for tasks, still others pay for some tasks, not for others, and vary in their attitude toward allowances. The following philosophy appears to be the most sound and practical: children are entitled to have an allowance so that they will be independent of adult whims. There should, under this system, be no treats by adults which encourage children to whine for purchases. Children should take over individual care and control as fast as possible. There should be no pay when children help an adult in a joint task. As soon as a child can do a job without guidance he is ready for pay. Eventually he will be paid only when he does routine tasks without reminder, since being responsible is headwork of a greater importance than the arm-and-leg-work of doing a job. Seasonal and emergency jobs are arranged as contracts.

Schedules for a well-organized family may well begin the evening before. In the suggested schedule in Table II all toileting times are not included, because these vary with the child's age and his periodicity and his training too much to be even tentatively calculated.

*Food for Five-year-old Child*²—The careful attention given to the infant's food is often neglected as the child grows older. This should not be. The hit-or-miss system of feeding children does not work. Children's diets have frequently been found to be deficient in milk, eggs, vegetables, and fruits—the most important foods in an adequate diet. The menu on page 262 is planned particularly for a child who will not drink milk. While milk is present in adequate amount, it is not evident to the child.

²For other menus see Mary Swartz Rose, *Feeding the Family* (third edition), Chapter VII. New York: The Macmillan Company, 1929

TABLE II
FAMILY SCHEDULES PLANNED FOR FAMILIES OF VARIOUS SIZES¹

TIME	INFANTS UNDER THREE	CHILDREN BELOW SCHOOL AGE	SCHOOL-AGE CHILDREN	ADULTS, WORKING WITH CHILDREN AND HOUSEHOLD (MOTHER, FATHER, AND OTHERS)
Evening.	Bathed (fathers are much better at this than they are expected to be). Bedtime 5 to 8 depending on child and family needs	Bathe with help Lay out clothes Pick up toys. Bedtime 5 30 to 7 30 depending on child and family needs Naps during the day are a factor	Community jobs Help (if needed) (alternative to school work) with dishes, cleaning, bathing younger children, breakfast preparation Individual jobs: Bathe, including nails, teeth, hair, etc Lay out. School materials Wraps Clothes, check for buttons, rips, matching colors Toilet articles School lunch in ice box. Pick up Laundry Toys Materials.	Bathe infants Prepare infant's formula (or in morning) Prepare breakfast as much as possible Pick up adults' materials. Check children on Toilet routine Clean ears Clothes Toys

¹ Prepared by Dr. Katherine B. Greene

TABLE II (continued)

Time	Infants Under Three	Children Below School Age	School-Age Children	Adults, Working with Children and Household (Mother, Father, and Others)
Evening (continued)	10:30 bottle (if included by doctor) Toilet		<p>Saturday (possibly other days) Learn home arts, cooking, sewing, carpentry</p> <p>Enjoy Games, music, Paper, books, Bedtime talks</p> <p>Bedtime 7 30 to 8 30 on nights before school, depending on child and family needs.</p>	<p>Teach home arts</p> <p>Enjoy children's company in Games Stories Songs</p> <p>Adult recreation (an essential) Planning period Mending, carpentering, study Running dust mop</p>
Bath time and supper time need to be adjusted to the family, time of father's arrival, his desire to bathe the children or have them eat supper with him				
Morning. One and a half hours before husband and older children leave (zero hour).	Toiletted, given a drink. Gets bottle or breakfast before others if needed	Toilet Dress with help Pick up night clothes Air beds.	Dress Air beds Help dress younger children Help set tables and serve breakfast.	Dress Check children's preparations Help younger children if needed Prepare and serve breakfast if needed.

TABLE II (continued)

TIME	INFANTS UNDER THREE	CHILDREN BELOW SCHOOL AGE	SCHOOL-AGE CHILDREN	ADULTS, WORKING WITH CHILDREN AND HOUSEHOLD (MOTHER, FATHER, AND OTHERS)
One hour before zero hour	Breakfast Bottle, nursing, etc	Breakfast.	Breakfast	Breakfast, serve and eat.
One half-hour before zero hour.	Washed. Toilet	Washed. Toilet.	Wash. Toilet. Make beds Chores. Gather laundry Chickens Pets Change to school clothes (or use aprons)	Supervise and check work when needed Write notes, make lists See that luncheon is packed. Explain again the schedule of unusual happenings for the day Final individual preparations.
Zero hour (a hectic period frequently)	Play, or in cot.	Play indoors or outdoors, alone, or with other children "Help" for mother.	Leave.	Leave, or start children on activities Morning tasks in running household Supervise children's play, teaching them to be independent and to enjoy being useful (This is a continual job entailing many interruptions)

TABLE II (continued)

TIME	INFANTS UNDER THREE	CHILDREN BELOW SCHOOL AGE	SCHOOL-AGE CHILDREN	ADULTS, WORKING WITH CHILDREN AND HOUSEHOLD (MOTHER, FATHER, AND OTHERS)
10:00 A M	Possible bath time Bottle or fruit juice, etc	Fruit juice and bread or crackers		Bathe infants, give out morning luncheon
11:15	Nap for smaller infants Luncheon for older	Start luncheon		Serve luncheon Finish preparations for later luncheon, or eat with younger
11:45 or 12:00	Nap for youngest. Toiletted and put to bed, older outdoors if possible.	Toiletted, put to bed	Clean up for luncheon, if home Put luncheon on table	Put napping children to bed Serve luncheon and eat with school children and adults
12:30 P M. or 12:45	Nap.	Nap.	Clean up Brief rest Leave.	Clear up or take nap, disengaging phone, doorbells, and restless children Adults leave home to go back to work
1 30	Smaller infants Toilet, water (If nap lasts later, the adult is in luck)			Smallest infants up Wash dishes and do housework
2 00	Older infants Toilet, fruit juice	Fruit juice and light luncheon		Supervise small children, sit with them for luncheon Housework Outdoors if possible

TABLE II (continued)

TIME	INFANTS UNDER THREE	CHILDREN BELOW SCHOOL AGE	SCHOOL-AGE CHILDREN	ADULTS, WORKING WITH CHILDREN AND HOUSEHOLD (MOTHER, FATHER, AND OTHERS)
2:30	Smaller infants. Bottle. Outdoors.	Outdoors.		Outdoors if possible, or housework if absolutely essential. Laundry can be done at night. Don't try to keep up with the Joneses on conventional scheduled times to work.
3:45			Light luncheon Outdoors (Schoolwork if still required by your schools) Play with younger children	
5 00	Possible bath time.	Possible bath time.		Adults' supper or dinner may come with the children or after they are in bed, depending on the situation
5:30 or 6:00	Older infants: Supper and bed.	Supper and bed.	Help, possible bath time, or play	
6:30	Younger infants: Bottle and bed probably		Supper or dinner	

TIME	DISHES	AMOUNTS (LEVEL MEASUREMENTS)
7 30 A.M.	Orange juice	1 orange
	Oatmeal cooked in milk	$\left\{ \begin{array}{l} \frac{1}{3} \text{ cup oatmeal} \\ \frac{1}{2} \text{ cup milk} \end{array} \right.$
	Bread (toasted)	1 slice
	Butter	$\frac{1}{2}$ tbsp
	Cocoa	$\left\{ \begin{array}{l} 2 \text{ t sugar} \\ 1 \text{ t cocoa} \\ 1 \text{ c milk} \end{array} \right.$
12:00	Cream of pea soup	
	Peas	$\frac{1}{3}$ cup
	Butter	$\frac{1}{2}$ tb
	Flour	$\frac{1}{2}$ tb.
	Milk	$\frac{1}{2}$ cup
	Toasted bread sticks	1 slice
	Scalloped tomato	$\frac{1}{2}$ cup
	Bread	$\left\{ \begin{array}{l} \frac{1}{2} \text{ slice} \\ \frac{1}{8} \text{ small head} \end{array} \right.$
	Lettuce	$\frac{1}{2}$ slice
	Butter	$\frac{1}{2}$ tb
	Stewed prunes	6 small
Supper 6 00 P.M.	Mashed potato with egg	
	Potato	$\left\{ \begin{array}{l} 1 \text{ medium} \\ \frac{1}{2} \text{ cup} \end{array} \right.$
	Milk	1
	Egg	1 cup milk
	Junket	$\left\{ \begin{array}{l} \frac{1}{4} \text{ junket tablet} \\ 1 \text{ teaspoonful sugar} \end{array} \right.$
	Zwieback	$1\frac{1}{2}$

*A Day's Food*³ — For a boy five years old and weighing forty-two pounds:

Standards	Measure
Milk	one quart
Wheatena	$\frac{2}{3}$ cup cooked
Cornflakes	one cup
Prunes	four
Carrots	two small
Lettuce	one-eighth small head

³ See Mary S. Rose, Elda Robb, and Gertrude Borgeson, *Child Nutrition on a Low-Priced Diet*. New York Teachers College, Columbia University, 1935. Pp. xiv + 109. Also Mary E. Sweeny and Dorothy C. Buck, *How to Feed Children in Nursery Schools*. Detroit Merrill-Palmer School, 1936.

<i>Standards</i>	<i>Measure</i>
Tomato . . .	one-half cup
Egg . . .	one
Sugar . . .	one-half tablespoon
Bread . . .	three slices
Butter . . .	one tablespoon
Potato . . .	one medium sized

In regard to nutritional standards "the optimal is the normal"

QUESTIONS AND PROBLEMS

1. Authorities differ as to the age at which meat should be introduced and as to the amount which should be given. Find and weigh references by authorities on this subject.

2. Study the daily schedules of several preschool children in different economic and social environments and improve these schedules by making necessary modifications of them, keeping in mind the mother's time and facilities for the care of children.

3. Plan a spring, summer, and winter dietary for a very poor city child and for a very poor country child which will meet the child's nutritional needs and at the same time be practical from the standpoint of the income of the family and the food resources of the community

4. Plan a thirty-minute talk for a meeting of a Parent-Teachers' Association which will emphasize the most essential points regarding diet for the preschool child. What pictures and exhibits, such as typical meals, foods containing equivalent amounts of minerals or vitamins, experimental animals fed on different diets, could you plan to use?

CHAPTER XIII

STUDY AND GUIDANCE OF PRE-SCHOOL CHILDREN

An only child, when asked how it happened that she was the only child is reported to have replied "Can't you see that mother has no time for more? Her job is studying me."

Though taken too seriously, perhaps, by some parents, the careful study of children can be of real value to the child, the parent, and the cause of education. The suggestions for child study already given in earlier chapters will be supplemented in this chapter by a description of applications to the later preschool years.

Satisfactory goals can be developed with each child only after a month or two of observation and testing. Even at this early age the child should have a part in formulating his own goals and immediate objectives.

OBSERVATION—DETAILED, SYSTEMATIC, ACCURATELY RECORDED

As in the study of infants, so also in the study of children two to six years of age, observation is frequently employed. Pestalozzi, working in the early period of child study and psychology, used systematic observation in the study of his young son. Pestalozzi's and Preyer's outlines for the systematic observation of children during the first year of life may be considered the precursors of mental tests for infants.

Observations by Students of Child Psychology.—If certain children are observed day by day from infancy on, not only in natural situations but also in experimental setups, sequences of behavior patterns begin to emerge and exact knowledge of what children do under certain conditions is obtained. Students of child psychology have made voluminous reports of their observations of individual children.

They record, sometimes by code,¹ every major movement a child makes, every word he speaks, every evidence of emotion he shows. From such records inventories of habits have been made and detailed activities tabulated and arranged in order of difficulty so that the steps taken in the development of certain abilities under particular environmental conditions may be clearly seen. In this way the steps in learning to set the table, for example, may be studied. What is the easiest thing a child can do to help set the table? Perhaps it is to carry a single napkin, knife, fork, or spoon to the table. Later, he can carry china and glassware and a pitcher of milk. Still more significant is the observation of the spontaneous play of children and the ways in which they show their absorption in these activities. This type of observation throws light on social as well as on motor development. It helps to define steps in learning to co-operate with others, to develop sympathy and understanding, to learn to carry messages or to follow directions.

More precise and accurate information may be obtained by selecting one specific kind of behavior to observe at regularly recurring time intervals. What the observations obtained by this method gain in accuracy, they may lose in significance unless they are interpreted in terms of the situation as a whole.² The number of pats, shoves, caresses may be ascertained with reliability, but what of it? These isolated, fragmentary acts have little meaning apart from the setting in which they occur. For that reason a running account of behavior — an all-inclusive diary record — from which specific items may be selected for analytical study and interpreted in terms of their context may be of more practical value than the precise time samples. In any case, qualitative records of the responses of children to the situation as a whole are necessary in order to understand the quantitative facts collected about individual children.

¹ Ruth W. Washburn, "A Simultaneous Observation-and-Recording Method with Specimen Records of Activity Patterns in Young Children," *Psychological Monographs*, XLVII, No. 2 (1936), 74-82.

² Helen McM. Bott, *Personality Development in Young Children*, p. 13. Toronto: University of Toronto Press, 1934.

Exact and definite knowledge of the way children respond to certain situations may be obtained from watching them when the stage is set in advance. One-way-vision screens make it possible for observers to see the children without the children being aware that they are being observed. Under such conditions, for example, the child's social reactions when only one companion is present may be contrasted with his activities when three or four companions are present. His behavior in the nursery school may be compared with his behavior at home; his attitude when his mother is present with his doings when she is absent.

Observations by Mothers.—Mothers may use with their own children methods of observation similar to those used by students of nursery school education. Repeated, day-by-day recorded observations of an individual child portray a many-sided development. The mother who has a hundred and one other things to do can concentrate on certain phases of her child's development. In the afternoon while he is playing with one or two other children, she may sit unobserved and make notes of his play interests, his attitude to others, his sense of ownership, and the many interests and characteristic types of behavior that crop out in play. Or she may study at mealtime his progress in a certain habit in which she is interested. Perhaps he has some behavior problem that is demanding attention. Observing and recording all details in relation to this problem is a first step toward its solution. The mother, however, must be careful not to interpret the infant's emotions and actions in terms of her own adult psychology.

Analysis of Steps in Various Learning Processes.—Van Alstyne and Hill³ made an analysis of the learning levels of nursery school children in eating and bathroom situations. This objective analysis of the behavior of children two to four years old, based upon diary records, was submitted to nursery school teachers and to other experts for

³ Dorothy Van Alstyne and Adeline B. Hill, *Learning Levels of the Children in the Nursery School with Reference to the Eating Situation*. New York. Teachers College, Columbia University, 1930.

judgment as to the correctness of the gradation of the steps. Motor, emotional, social, and mental aspects were included on each learning level and a description of the responsibilities of both the child and the teacher given parallel to each level. The following is a selection from the eating situation:

- A. Has to be urged to go to the table.
 1. Seems reluctant to go.
 - Pulls back.
 - Cries
 - Runs away
 - Says, "no dinner"
 - Combination of any of the above
 - 2 Shows willingness to go
 - Goes to table without any apparent reluctance.
 - Claps hands.
 - Jumps up and down and laughs

Parallel to these responses are:

Child's Part

To respond readily when teacher says "It is time for dinner"

To comply with teacher's request that he go to the table when her hand is offered to him

To become willing to leave a favorite toy or an activity and to join in what is expected of him

Teacher's Responsibility

To go to the table herself saying "Come, ——" expecting the child to follow

To repeat "It is dinner-time" with an air of expectancy that the request will be acted upon

To take the child's hand gently but firmly, and attempt to lead him to the table

- E. Getting food on spoon or fork
 1. Puts mouth to bowl, and eats from side of bowl.
 2. Takes food in fingers, and eats it.
 3. Food has to be put on spoon by teacher.
 4. Child puts food on spoon with fingers
 5. Spoon has to be steadied by teacher while child puts food on.
 6. Puts food on spoon or fork with toast.
 7. Puts food on spoon or fork unaided.
 8. Takes heaping spoonful or forkful *

* *Ibid.*, pp. 4, 19.

Observation of Interests — Observation of a child's likes and dislikes is instructive. For example, the kind of stories and the parts in which children are most interested may be discovered by telling them various kinds of tales, while some unobtrusive observer makes detailed notes of the children's reactions — the points at which their attention is heightened and at which it is diminished, the parts at which they smile or laugh, and the comments and exclamations they make. If the observer has a copy of the story, he may make in the margin a minus sign indicating attention to something else, an *O* indicating a passive attitude; a plus sign, slight attention, two plusses, marked attention; three plusses, complete absorption; and other similar marks to make a rapid and complete record of responses. After the story is told, talking it over with the children in informal conversation, asking children to draw pictures illustrating the story, or to dramatize the story will bring out the points which made the greatest appeal.

RATING OF CHILDREN'S BEHAVIOR

Rating scales are essentially means of directing observation. It is especially desirable that observation be directed toward positive aspects of development rather than toward behavior problems. From this standpoint a most useful rating scale for teachers of preschool and primary children is the Winnetka Scale for Rating School Behavior and Attitudes,⁵ because it is constructed in terms of everyday classroom situations. It directs the teacher's attention to the way children behave when they are taking turns with apparatus or materials, have a social task to complete, are faced with failure, and are engaged in other daily activities. The adult's observation is further guided by a series of statements under each heading, ranging from the most approved response to the least approved. The tendency in rating is away from the rating of such general traits as honesty and toward either

⁵ Dorothy Van Alstyne and the Winnetka Public School Faculty, *Winnetka Scale for Rating School Behavior*. Winnetka, Illinois: Winnetka Educational Press.

recorded observation of specific behavior, or a paragraph describing the salient points in the individual's personality as a whole.

Ratings and records of observations must be cautiously interpreted for at least four reasons. First, the observed behavior is only a sample of the child's total behavior; it may not truly represent him. Second, the child changes and his behavior in the past may be quite different from his present thought and action. Moreover, his response varies with different people and in different environments. Third, observation reveals the observer as well as the child observed, and fourth, the same observed behavior may have diverse motivation, meaning, and significance for different children.

PHYSICAL EXAMINATION

A thorough physical and medical examination made by a physician is an essential procedure in studying the preschool child. This examination should include an estimate of the nutritional condition. The condition of the arches of the feet is also important, since defects can be corrected in this period through barefoot games, such as scooping up sand with the outside of the feet and carrying marbles with the toes across the room. The throat, nose, teeth, ears, and eyes should be thoroughly examined, and diseased tonsils and adenoids, decayed teeth, defects of hearing and seeing should be immediately treated according to the physician's direction. Any kind of defect grows worse very rapidly in this preschool period. Taking the temperature and pulse rate, examining the lungs and heart, making an urinalysis and blood count to detect anemia are part of a thorough examination.

Many of the errors formerly made in testing the hearing of young children have now been eliminated. The test should be an individual one, the sounds standardized, the words familiar to a little child, and the method of reporting well within the child's ability. One of the most simplified tests uses a phonograph record of twelve common names,

such as "cat," "dog," and "door." As the child hears the word, he points to the proper picture in the row of cards placed before him. As the testing progresses, the intensity of the sound is gradually decreased.

MENTAL TESTS

Tests supplement observation. They are valuable to show how a child acts in a standardized situation.

Mental tests which are to be used in making any important decision concerning a child should be given by a trained psychologist. Even under expert testing a parent or teacher can be more certain that a high intelligence quotient is correct than he can be if the score is low, because various conditions may interfere with the child's doing his best, or, in other words, from demonstrating his true mental ability. Mental tests aid a parent or teacher in gaining quickly a more accurate idea of the child's memory, number facility, verbal relations, visual imagery, word fluency, and ability to see relationships than can be obtained through observation alone.

Tests for preschool children must be interesting to them, and the examiner must be skilful in calling forth the best response a child is capable of making. At the same time, the test should be easy to give and use fairly simple materials. It should measure fundamental abilities and discriminate between age levels.

The Kuhlmann revision and extension of the Binet-Simon Scale has been widely used in the study of preschool children. The new Stanford revision of the Binet test has been extended down to the second year and will be extensively used in testing children two to six years of age as well as older children.⁶

The tests described by Gesell in his *The Mental Growth of the Pre-school Child* and the other preschool tests listed on pages 80-81 have the advantage of covering many aspects of physical, mental, and social development. They also in-

⁶ Lewis M. Terman and Maud A. Merrill, *Measuring Intelligence*. Boston: Houghton Mifflin Company, 1937.

clude reactions of great practical value, such as bowel control, buttoning clothes, going on simple errands, and the like. The Merrill-Palmer Scale for children one and a half to six years of age consists of ninety-three tests arranged in order of difficulty. Such a scale gives the parent an appreciation of the all-round, progressive development of young children.

A somewhat different type of test is the performance test. Rachel Stutsman⁷ has developed performance tests for children of preschool age which were standardized at the Merrill-Palmer School, Detroit. The method of administering the examination is important. The examiner is alone with the child. The room is cleared as far as possible of objects which might distract the child from the test material. An hour is allowed for each examination, but it usually takes only thirty to forty-five minutes. One test involves the use of sixteen colored cubes in building a tower and in replacing them all in the box. Other tests consist of a nest of cubes to be taken apart by the examiner and put together correctly by the child; a board with pegs to be put back into their holes; repetition of words and groups of words; answering simple questions; picture puzzles to be put together; an association test — "What runs?", "What cries?"; and five small pink blocks which are built into a little tower behind a screen and placed in front of the child who is then asked to rebuild it without a model from which to copy.

Another interesting way of measuring intelligence has been suggested by Goodenough.⁸ From a child's drawing of a man, an estimate of intelligence can be made which Goodenough found correlated highly with the Binet Test. Several investigators have found the Goodenough test to be a reliable measure. The drawings of subnormal children contained many immature elements, such as absence of trunk, the attachment of arms and legs at the neck, and disproportion of parts. The immature elements overbalanced

⁷ Rachel Stutsman, *Mental Measurement of Preschool Children, with a Guide for the Administration of the Merrill-Palmer Scale of Mental Tests* Yonkers-on-Hudson World Book Company, 1931.

⁸ Florence L. Goodenough, *Measurement of Intelligence by Drawings* Yonkers-on-Hudson World Book Company, 1926

the mature elements so that the subnormal children's scores were lower than those of younger normal children. The most artistic drawing was made by one of the subnormal children, but it contained a hand crudely drawn. Relatively inexperienced persons, if given a brief period of supervised scoring, seemed to be capable of getting fairly reliable results on the Goodenough test.

Van Alstyne⁹ found that a vocabulary-comprehension test, which is very easy to administer, takes approximately fifteen minutes to give, and is liked by even the more negativistic children, indicated the degree of a three-year-old child's intelligence as well as the Kuhlmann test.

The Rorschach Ink-Blot test of personality has been used with precocious children as young as two to three years and with average four- to five-year-old children. The unusual pictures of the Rorschach test attract children who might respond negativistically to less intriguing test material. The Rorschach test is of value in

revealing the unusual cases of creative imagination where intelligence and performance scores are only average or even inferior.¹⁰

There is a possibility that the test may detect early in life neurotic and psychotic trends which could be modified in these early years. Sunne¹¹ has reported norms for the Rorschach test administered by one method to boys and girls from four and a half to eleven years of age in widely different social-racial groups. Hertz¹² has presented an approved method of administering the test. The administration of the test, at first glance, appears to be simple, but further study impresses one with the difficulties of recording and interpretation. Reliable results cannot be expected

⁹Dorothy Van Alstyne, *A Picture Vocabulary Test for Pre-School Children* (Bloomington, Ill.: Public School Publishing Company, 1929).

¹⁰Dagny Sunne, "Rorschach Test Norms of Young Children," *Child Development*, VII (December, 1936), 304.

¹¹*Ibid.*, pp. 305-308.

¹²Marguerite R. Hertz, "The Method of Administration of the Rorschach Ink-Blot Test," *Child Development*, VII (December, 1936), 237-254.

unless the test is given by a highly expert person with clinical experience in its use.

MEASURES OF MOTOR ACHIEVEMENTS

The tests of motor ability, included in the batteries of preschool tests, have attempted to measure rather specific motor responses that showed little interrelation. Moreover, the many abilities tested were not duplicated in the everyday life of the child. To correct this deficiency Wellman¹³ and her students selected such common motor achievements as ascending steps, climbing a ladder, throwing, catching and bouncing balls of two sizes, jumping from boxes of different heights, hopping, skipping, walking a one-inch path in a straight line and in a circle. When repeated, these tests showed high consistency, and give promise of being effective measures of everyday motor skills of preschool children

STUDYING PRESCHOOL CHILDREN IN THE NURSERY SCHOOL

All methods described in this chapter may be applied to the study of an individual child and are used in many nursery schools. A child entering a nursery school is given an examination by a physician, and the Kuhlmann or Stanford Revision of the Binet Test and performance tests by a psychologist. An interview with the child's parents, preferably in his home, discloses the family background. The teacher makes observations of his behavior daily—his ability in walking, running, and climbing, his response to the objects and to the children with which he plays, his response to music, his ability to feed himself at mealtime, the language he uses, his disposition. These observations are systematically recorded and progress noted.

It is surprising how much information may be collected

¹³ Beth L. Wellman, "Motor Achievements of Preschool Children," *Child hood Education*, XIII (March, 1937), 311-316

about a single child over a period of time. In one study¹⁴ of a child from twenty months of age to eight and a half years old there were eleven pages summarizing information from the Merrill-Palmer school records on infancy, including the information given by the mother and a description of the family and its history; 161 pages on the preschool period, including an analysis and summary of the nursery school records of physical and mental growth and habits and personality including an analysis and summary of the records; and five pages of conclusions. In addition to the manuscript in which the qualitative data were reported, there were graphs showing time series of quantitative data, made comparable by adoption of the same "time base"; and charts, including a

Life Chart, showing ages when tendencies first appeared, events in the life of the child, and relevant explanatory data, and *Constellation Charts*, showing diagrammatically certain assumed interrelations of the data.¹⁵

These two charts are especially significant for understanding an individual child. The *Life Chart* synchronizes periods of emotional adjustment and maladjustment with periods of slow and rapid growth and with concomitant events in the child's life, and shows trends in personality development. The *Constellation Chart* shows interrelationships between certain personality traits and the influences that may have contributed to their development.

It is possible to waste a great deal of time in keeping records and to emerge with volumes of obvious and insignificant notes. But this is not necessary. The clinical and experimental work that has already been done suggests items that are likely to be most closely related to good development. Sensitivity to the needs of the individual helps one to find lines of study to be pursued in a particular case.

¹⁴ Elise Hatt Campbell and Marian E. Breckenridge, "An Experiment in the Study of Individual Development," *Child Development*, VII (March, 1936), 37-39.

¹⁵ *Ibid.*, p. 38.

STUDYING THE HOME ENVIRONMENT AND THE
RELATIONSHIP OF PARENTS TO
EACH OTHER

Studying the home environment is often as profitable in producing desirable changes in children as studying a child directly.¹⁶ Questions such as the following should be considered. (1) Has the homemaker studied the movements involved in the various tasks she must perform, in order that she may learn to use the fewest, the most rhythmical, and the least energy-consuming motions? Neglect of the child may be due to the mother's being worried and troubled about too many things. (2) Has the homemaker definitely decided which processes can be performed most economically outside of the home? For example, the laundering of sheets, tablecloths, and all flat pieces can usually be done far more efficiently in a steam laundry than in a private home with only the primitive laundry equipment of tub, washboard, and iron. (3) Has the homemaker attempted to schedule the operations in her home? (4) Is the space available in the home used to its best advantage? For example, many city roofs may be fenced in and used as play space where both adults and children could enjoy sunlight, fresh air, and freedom from the noise, dirt, and danger of the street. (5) Is the diet for the entire family scientifically planned with a view to its nutritive value, ease of preparation, and cost? (6) Is the furnishing of the home restful, beautiful, easy to keep clean and orderly? (7) Is every member of the family given a just share of sole responsibility for some phase of the housekeeping in which he is specially interested or capable of performing? (8) Is expert advice sought in budgeting the family income? Budgeting of both money and time gives a feeling of security which can never be attained by a hit-or-miss expenditure.

A scale for the measurement of urban home environment

¹⁶ Berta Weiss Hattwick, "Interrelations between the Preschool Child's Behavior and Certain Factors in the Home," *Child Development*, VII (September, 1936), 200-226.

makes the study of home background more meaningful and precise.¹⁷ It is also of value in suggesting items in the home environment which have the greatest sociological and psychological significance. Parents and teachers might use the scale in making an inventory of a particular home with a view to making desirable changes in it.

The relationship of parents to each other exerts a potent and subtle influence on the child. Wickes¹⁸ emphasizes the need for parents to analyze and modify their own mental mechanisms as a first step in dealing with behavior problems in their children. Questions, such as the following should be considered. (1) Does the parent have irrational fears? (2) Is there antagonism between parents? (3) Do the parents seek satisfactions in their child which they fail to find in each other? (4) Are the parents living in an atmosphere of tension, repression, and restraint? (5) Does one parent belittle or undermine the authority of the other? (6) Does one parent shirk many of the more difficult details of training, such as those involved in bowel and bladder control, personal cleanliness, and table manners?

Lincoln Steffens gives an interesting example of parents' differing attitude toward their child:

I loved my mother, but — my father respected me. He respected, as you see, my disobedience; he respected my bunk, my lies, my crimes. When I was a fireman, mother made me clothes of red stuff that were suitable for a firefighter — sure, and she let me ride my pony to fires; but when one day there was an alarm during dinner and I leaped up so quick that I nearly upset the table, she remonstrated and forbade me to go to that fire. I wasn't really a fireman to her. To my father I was. He sprang up too, put out a hand to stay my mother's indignation, and shouted: "Go it, boy! Get there — first!"¹⁹

¹⁷ Alice M. Leahy, *The Measurement of Urban Home Environment; Validation and Standardization of the Minnesota Home Status Index*. Institute of Child Welfare Monograph Series, XI. Minneapolis, Minn.: University of Minnesota, 1936.

¹⁸ Frances G. Wickes, *The Inner World of Childhood*, Chap. II. New York: D. Appleton-Century Company, 1927.

¹⁹ Lincoln Steffens, "The Influence of My Father on My Son," *The Atlantic Monthly*, CLIX (May, 1937), 527.

Differences of opinion in parents need not have an unfavorable influence on a child's development. The fact that a difference exists even between two persons so close to each other and to him may give him a better start in the world outside his home than if no such difference exists. He may be less dogmatic, less critical of others, because he has learned from the very beginning that nothing is too sacred to be investigated. If he can grow up in a home where varying opinions, instead of causing rancour or underhandedness, lead to well-considered compromise or a good-natured yielding on the part of one parent, he is luckier than many children who have to learn "League of Nations" solutions later.

USE OF INFORMATION GATHERED

Nothing is more futile than to collect information about children that is never used either to increase our knowledge of the principles of child development or to aid us in understanding individual children. The use of information for the latter purpose is a more difficult task than the collection of it and requires true wisdom on the part of teachers and parents. A little knowledge is a dangerous thing when it is not used wisely.

Information from various sources should be weighed and checked and interpreted. Starting with the day-by-day observation of a child, the teacher or parent may acquire a picture of the development of his speech and actions. Changes in his characteristic behavior call for further study. Standardized tests supply a check on the parent's or teacher's observation. Through conversations with the child, the meaning of the behavior to him may be revealed. A study of the environment is necessary for therapeutic as well as diagnostic purposes, for it is largely through making changes in the environment that the adjustment of preschool children is effected.

A record of representative performance of children three to six years old would have four possible values: (1) through its very concreteness it would give an appreciation of the

fact that the child grows in physical, mental, and social abilities, (2) a comparison with "norms" would show extreme deviations from typical behavior which may indicate, on one hand, too stimulating an environment, or, on the other hand, failure to provide sufficient stimulus, (3) it would indicate broad sequences of development through which children normally pass, and (4) it would encourage specific, accurate observation. A list of typical behavior, however, is more difficult to compile for children of three to six years of age than for younger children who are acquiring the more fundamental motor and mental abilities. As children grow older, their specific accomplishments vary increasingly with environmental conditions including the specific instruction which they have received. The general trends in the development of motor ability, speech, memory and attention, and social relationships have already been described. The parent or teacher might similarly describe the development of an individual child with a view to helping him to realize his full potentialities.

QUESTIONS AND PROBLEMS

1 Using some inventory of habits, compare a certain child's habits with those in the list. Has the child being studied formed those habits commonly found in children of this age?

2 Observe the child while he is forming a new habit. What evidence of trial and success do you find? What evidence of the effect of satisfaction and of dissatisfaction or annoyance? What stimuli in his surroundings aided him? What instruction appeared to be useful?

3. Observe the child while he is breaking a bad habit, such as crying when left alone. What did the parent do that seemed ineffective? What did the parent do that seemed effective? Was the process one of re-education? By careful preliminary planning might the substitute habits have been formed more easily? Apply the knowledge gained from these observations to new situations.

4. Ask children of different ages to draw a man and score the results according to the directions given in Goodenough's book.

5. Use the *Winnetka Scale for Rating School Behavior* with several nursery school children. Use the Marston Scale with the same children. Which did you find the more useful in understanding the individual children?

6. Delving into your own experience with people, compare the children of three couples which were openly not harmonious with the children of three couples you are sure were harmonious

7. What might a busy mother expect in the way of help from her three children, a boy of six, a girl of four, and a girl of two? Make a list of the things which these children could be trained to do reasonably well

8. Read a number of case studies of preschool children,²⁰ then write in the form of a case study all the significant information about one child (not necessarily a problem case) which you can obtain from observation, ratings, physical examinations, and tests

EXAMINATION—PRESCHOOL PERIOD

1. Check the methods and kinds of knowledge which are characteristic of scientific study of preschool children
 - a. Observation of definite details of child behavior
 - b. Knowledge of the behavior to expect of children in a certain stage of development in certain environments
 - c. Keeping in mind what the child does and recording it at a later time.
 - d. Systematic and repeated observation.
 - e. Immediate and accurate recording of observations.
 - f. Knowing in a general way the characteristics of children.
 - g. Making motion picture records of activity.
 - h. Making phonographic records of children's speech.
 - i. Using standard achievement and intelligence tests.
 - j. Questioning children about their activities.
 - k. Experimenting under controlled conditions
 1. Observing the child only when he does something annoying.
 - m. Making stenographic records of a child's activity
2. Of the following list of abilities, mark 1 those you would expect more than 50 per cent of children to acquire during the first year, mark 2 those you would expect more than 50 per cent of children to acquire during the second year; and mark 3 those you would expect more than 50 per cent of children to acquire in the remainder of the preschool period.

²⁰ M. S. Fisher, "Case Studies of Normal Children," *Childhood Education*, VII (April, 1931), 428-433

Mary Goodman, *Language Development in a Nursery School Child*, A Case Study. Child Research Clinic Series, Vol. II, No. 4. Langhorne, Pennsylvania. Child Research Clinic of the Woods Schools.

Child Research Clinic of the Woods Schools, *Emotional Instability*, A Case Study. Child Research Clinic Series, Vol. I, No. 2. Langhorne, Pennsylvania. Child Research Clinic of the Woods Schools

Mary B. Sayles, "Natalie Abrams," in *Child Guidance Cases*, pp. 3-58. New York. The Commonwealth Fund, 1932.

- a To pick things up and hold them
 - b. To walk without difficulty (automatically).
 - c To show a preference for one hand in reaching for objects.
 - d To draw imitatively a circle.
 - e. To button his clothes
 - f To run, and climb for objects.
 - g. To pull off his own cap and stockings.
 - h. To put on his hat and coat without help.
 - i. To draw a recognizable picture of a man.
 - j. To take a few steps with help.
 - k To sit alone without support
 - l. To lace his shoes
 - m. To throw and catch a ball.
 - n. To replace toys or blocks neatly in a box.
 - o. To recognize faces.
 - p. To set the table with knives, forks, spoons, and plates
 - q. To look for something with which he has been playing and which has suddenly dropped to the floor
 - r To stand with support
 - s. To hold a cup with both hands.
 - t To go on simple errands around the home and in the immediate neighborhood.
 - u To say four words.
 - v. To cross the street alone safely, when a policeman is regulating the traffic.
 - w. To stop doing a simple act when told to.
 - x. To perform commissions such as, "Put the key on a chair, then shut the door, then bring that box."
 - y. To lift two blocks of equal size but of different weight and tell which is heavier
 - z. To pull little wagons.
 - aa. To feed himself without spilling the food.
 - bb. To put a cube in a cup when told to do so.
3. Number in order the steps usually taken in acquiring speech.
- Babbling his own sounds.
 - Repeating sounds of his own that sound like adult words.
 - Speaking in sentences.
 - Making a monotonous undifferentiated cry.
 - Trying to repeat adults' words.
 - Understanding words and sentences spoken by others.
 - Making differentiated cries indicating pain, hunger, or satisfaction.
 - Using prepositions, pronouns, and conjunctions correctly.
 - Using pairs of words.
 - Using single words to stand for complex situations.

4. Fill in the blanks of the following sentences:
- The most effective method of eliminating certain fears is
.....
 - Intelligent children have been found to talk at age
than dull children.
 - It is to try to correct left-handedness
after it is firmly established.
 - A child in a temper tantrum should be
5. In the following, check the one best answer in each exercise
- Information about the parts of the body and differences between
the sexes should be given to a child
After he enters school.
At the age of eight.
At the age of twelve.
When he first indicates an interest in questions of sex.
 - The best kind of toys for a four-year-old child are
Toys which he can use in several ways
Mechanical toys.
Noise-making toys.
Small toys.
 - If a three-year-old child is afraid in the dark, the best thing
to do is to
Pay no attention to him.
Show him how to take an active part in meeting the situation
Do not leave him alone in the dark
Laugh at his fear and tell him how silly he is to be afraid of
the dark
 - To establish a new habit and break down an old one, the best
procedure is to
Remove all temptations to do the undesirable act.
Fix the child's attention on the bad habit
Make the new habit pleasant and the old habit unpleasant
Don't bother about the bad habit because the child will out-
grow it.
 - If a four-year-old child becomes angry when he stumbles over a
chair you should
Divert his attention by blaming the "bad" chair.
Find out the underlying cause of his ill temper.
Try to comfort him
In the future remove all obstacles from his path.
 - Many parents would be more successful in child training if they
would
Keep their children with them constantly
Give in to the children when they are persistent in their de-
mands.

- Treat the children more consistently.
Be tireless in looking for defects in their children.
- g. If a child wakes up in the night crying, the best thing to do
is to
Rock him to sleep.
Give him something to eat.
Let him cry after you have made sure there is no physical cause
for his crying
Stay away from him entirely, and let him cry it out.
- h. The best method of dealing with negativism is
To coax the child to do what you want him to do
To slap the child every time he says "I won't."
To give him a piece of candy or a cookie as a reward for
obedience.
To give the child wherever possible a sense of individual freedom,
and to show approval of the child's voluntary co-operative acts.
- i Check the method you would recommend to a mother in the
treatment of enuresis.
Have a physician examine the child for physical cause and let
the child assume responsibility for the trouble he causes and
maintain a calm, matter-of-fact way of dealing with the
situation.
Scold the child every time he fails to control the bladder and
thus accompany the undesirable act with dissatisfaction
Sympathize with the child each time failure occurs and hurriedly
remove all traces of the accident for him.
Let the child stay wet and uncomfortable as a natural punishment
for failure to control his movements.

BIBLIOGRAPHY

BLATZ, WILLIAM E., and BOTT, HELEN. *The Management of Young Children*. New York: William Morrow and Company, 1930. Pp. xii + 354.

A valuable presentation of the underlying principles of social adjustment of children and the child-parent relationship, designed for study groups, and including vivid illustrations of problems in the parents' own words.

BLATZ, WILLIAM E., MILLICHAMP, DOROTHY, and FLETCHER, MARGARET. *Nursery Education, Theory and Practice*. New York: William Morrow and Company, 1935. Pp. xv + 365.

A detailed account, in non-technical form, of the theory and practices of education at the preschool level.

GESELL, ARNOLD *The Guidance of Mental Growth in Infant and Child* New York The Macmillan Company, 1930 Pp 322.

An historical, philosophical and psychological description of trends in the study of child development

HAWTREY, F *French Nursery Schools*. London J M. Dent and Sons, Ltd, 1935 Pp. 87

A description and discussion of the personnel in charge, the physical equipment, and methods of instruction in French nursery schools.

ISAACS, SUSAN *The Nursery Years* (enlarged edition). New York: The Vanguard Press, 1932 Pp v + 138

A chatty presentation to parents of principles and practical suggestions for child development during the early years

JERSILD, ARTHUR T. *Child Psychology* New York: Prentice-Hall, Inc., 1933 Pp xiii + 462

Summarizes admirably the practical findings of research in the preschool years

JOHNSON, HARRIET M. *Children in the Nursery School* New York: John Day Company, 1928 Pp. xx + 325

A detailed interpretative picture of the nursery school and its children, charmingly illustrated with photographs of children in action.

KEY, C. B., *et al* "The Process of Learning to Dress among Nursery School Children," *Genetic Psychology Monographs*, XVIII (April, 1936), 67-163

A scientifically constructed scale for measuring the dressing process and suggestions for training in the process

LANGDON, GRACE. *Home Guidance for Young Children* New York: John Day Company, 1931. Pp. xvii + 406

A handbook for parents. Takes up all phases of the training and care of young children.

LEEPER, MARY E "Childhood Education in Other Countries," *Childhood Education*, XII (February, 1936), 197-200

A summary of the discussions at conferences in Geneva, Brussels, and Oxford, regarding teacher preparation and the present status of preschool education in the countries participating.

MACFARLANE JEAN W "A Child Guidance Research Plan," *The Psychological Bulletin*, XXXI (1934), 596.

A preliminary report of an investigation still under way at the California Institute of Child Welfare to ascertain the benefits of continuous expert guidance

MARSTON, LESLIE R. *The Emotions of Young Children: An Experimental Study in Introversion and Extroversion* Studies in Child Welfare, Vol. III Iowa City, Iowa University of Iowa, June 15, 1925 Pp 99

An experimental study of the emotional reactions of children, using both rating scale and test methods The detailed descriptions of the reactions of individual children to the different test situations are extremely interesting

MURPHY, LOIS BARCLAY *Social Behavior and Child Personality* An Exploratory Study of Some Roots of Sympathy New York Columbia University Press, 1937 Pp 344

An admirable experimental study of sympathetic behavior of nursery school children in natural and in controlled situations.

PIAGET, JEAN *The Language and Thought of the Child* (revised edition) New York Harcourt, Brace and Company, 1932 Pp. xxiii + 246

A technical discussion, giving results of much observation and informal experimentation

ROSE, MARY S., and BORGESON, GERTRUDE M. *Child Nutrition in a Low Priced Diet* Child Development Monograph No. 17, 1935. Pp 1-85

A practical dietary study on the lower economic levels

STERN, WILLIAM. *Psychology of Early Childhood*. New York: Henry Holt and Company, 1924. Pp 557

A psychology of children from the first to the sixth year. Includes entertaining extracts from the unpublished diaries of Clara Stern

United States Department of Labor *The Child from One to Six, His Care and Training* Children's Bureau Publication No. 30. Washington, D. C.: United States Government Printing Office, 1935 Pp. v + 150

A practical manual on the care of the young child in the home

UPDEGRAFF, RUTH "Susceptibility of Nursery School Children to Certain Communicable Diseases of Childhood," *American Journal of Diseases of Children*, XLVIII (July, 1934), 101-107

A useful application of mortality and morbidity statistics to problems of disease prevention in the preschool.

WAGONER, LOVISA C. *The Constructive Ability of Young Children* Studies in Child Welfare, Vol. III, No. 2. Iowa City, Iowa: University of Iowa, June 1, 1925. Pp. 55.

An experimental study of specific constructive ability of 149 children, most of whom were four, five, and six years of age

The study suggests practical applications concerning temperamental characteristics, creative ability, and suitable play materials

WEILL, BLANCHE C *Behavior of Young Children in the Same Family* Cambridge, Mass Harvard University Press, 1928 Pp x + 220

A convincing support through case studies of the hypothesis that there are individual environments for each child in the family.

WILSON, CHARLES A, et al. *Merrill Palmer Standards of Physical and Mental Growth* Detroit, Michigan Merrill-Palmer School, 1932. Pp ix + 121

Detailed, carefully determined central tendencies of physical and mental development, with description of method

White House Conference on Child Health and Protection Section I *Medical Service: Health Protection for the Preschool Child* Committee on Medical Care for Children, Philip Van Ingen, Chairman New York The Century Company, 1931. Pp. xxi + 275.

A survey of medical and dental service for children in the United States

White House Conference on Child Health and Protection Section III. *Education and Training: Nursery Education* Committee on the Infant and the Preschool Child, John A Anderson, Chairman. New York: The Century Company, 1931. Pp xxi + 187

A survey of nursery school education in the United States.

PART IV

THE PRIMARY PERIOD

CHAPTER XIV

DEVELOPMENT DURING THE PRIMARY PERIOD

INTRODUCTION

Years six, seven, and eight, which in the conventional school coincide with grades one, two, and three, are commonly called the *primary period*. This period is primary in the sense that in these grades beginning reading, beginning writing, and beginning arithmetic are usually introduced in a systematic way. But the kindergarten or the first grade does not truly witness the first steps in any of these abilities. The first step in learning to read is taken when the baby learns to look fixedly at an object. Learning to distinguish objects, learning the meaning of spoken words, acquiring an interest in books and stories are preliminary steps in learning to read. The child who has a good vocabulary of words, the meanings of which have been built by firsthand experience and patient answering of his preschool questions, and who is curious to discover for himself the meaning of those black and white marks in his books which mother translates into fascinating stories, has been well prepared for beginning reading.

Similarly, the first steps in arithmetic have been taken in the preschool period when the child has had firsthand experience in arranging various objects in series, in using pints, quarts, feet, and inches; in dividing apples or grapes among his playmates, in bringing five potatoes from the cellar, in looking up the eggs, and in hundreds of similar experiences with quantities.

School success in writing, drawing, and constructive work depends largely on the motor co-ordination and control which the child has acquired by scribbling, hammering, and

cutting materials, dressing himself, and building and handling objects and tools during the first five years of his life.

Similarly, his ability to get along with the teacher and with other children depends upon the way he has learned to play with children at home and upon his attitude toward authority. His social adjustment in school likewise depends upon whether he has acquired the skills that will enable him to take his place with self-confidence in the group.

The importance of the preschool period for success in the first years of school cannot be overemphasized. The preschool child "is father to" the first grade child. The answers to the following questions are determined in the preschool period: What kind of child is sent to school? Is he a self-reliant little chap who meets the mystery and strangeness of his first day of school with good-natured curiosity and cooperation? Or is he a timid child clinging to his mother or an older sister, crying when she leaves him, afraid of the teacher, afraid of the other children, hiding his face on the desk, and standing alone when the other children are playing games at recess? Does he enjoy taking part in the activities of the group, sometimes taking the part of audience and sometimes playing the role of performer? Is his conduct determined by more remote goals instead of by the interests and needs of the present? Does he try to get what he wants by working for it in a socially acceptable way? Does he face the fact that there are certain things that he cannot do and certain things that he cannot have? Can he put on his coat and hat, manage the buttons himself, and tie his own shoe laces? Or does he wait for someone else to button him up and bundle him off?

Although the child's actions are strongly motivated by the accumulated habits of his short past, he will find new opportunities for development in the primary period. Each age has its characteristic experiences and opportunities. As Robert Louis Stevenson said,

It is good to have been young in youth, and as years go on to grow older, to travel deliberately through one's ages and to get the heart out of a liberal education

The following chapters in this section attempt to show the achievements which may be expected and how they may be encouraged and attained. Other chapters will be devoted to suggestions for child study and guidance.

PHYSICAL DEVELOPMENT AND HEALTH

Appraising the physical status of children is not an easy task. Some children are tall and thin; others, short and stocky, still others, frail in build, short, and slender. Moreover, they grow at different rates. With such wide variations in body build and rate of growth it is obvious that general average weights for children of a given age will not be the "normal" weights for all children. The simple height-weight-age ratio used so extensively in the past has been found wanting. It has centered attention too largely on structure instead of on functional efficiency. It has viewed the child statically rather than dynamically in terms of continuing growth and development. In some cases, blind adherence to height and weight tables has led to anxiety on the part of parents which has been reflected in the children's behavior. It is more important for parents and teachers to provide an environment in which children will grow at their own optimum rate than to try to bring them up to the average height and weight of their chronological age group.

Growth in Height and Weight. — Certain general trends in growth, however, should be noted. During the primary period children grow more slowly than they did previously. From the sixth through the tenth year of age is a period of relatively slow growth for boys.¹ During these years the average annual gains in height decrease regularly, with little relationship to height already attained. The same relatively slow growth in height occurs for girls of the same ages.

Gain in weight during this period, on the other hand, is influenced by weight already attained. For example, it was

¹ Carroll E. Palmer, Riiti Kawakami, and Lowell J. Reed, "Anthropometric Studies of Individual Growth. II. Age, Weight, and Rate of Growth in Weight, Elementary School Children," *Child Development*, VIII (March, 1937), 47-61.

shown that the gains of ten-year-old girls varied from five to fourteen pounds a year depending on whether the girls weighed fifty or ninety pounds at the beginning of the age period.² Obviously, the average gain of 7.6 pounds per year for girls of this age would be unsatisfactory as a standard inasmuch as

growth in weight is more dependent on weight attained than on chronological age.³

This is especially true during the years in which boys increase in weight from thirty-two to sixty-eight pounds, and girls from thirty-two to sixty pounds.

It has been noted that girls grow a little faster than boys. The typical six-year-old girl has a development of the bones about as mature as the typical seven-year-old boy.

Feeble-minded children show a continuous body growth toward maturity but seldom reach the qualitative and quantitative development of normal children. This generalization probably applies to hereditary feeble-mindedness rather than to feeble-mindedness caused by accidents of birth, disease, and other environmental factors. One of the most striking facts that has been shown by recent study of the growth of individual children is the tremendous variation. Some children grow slowly, others fast; some grow slowly in height and rapidly in breadth; some grow fast one year and slowly the next year. During the primary period, however, the child's height is likely to be more constant in relation to his group than during the later years of childhood. Two boys may remain within one inch of the same height up to the age of eleven and then one of them shoot ahead, until by seventeen he is much taller than his classmates.

Teeth. — During the sixth year the first of the permanent teeth, which were already partly developed at birth, push their way through the gums back of the temporary molars. These first permanent teeth are often referred to as the six-year molars. The permanent front teeth (incisors) are

² *Ibid.*, p. 57.

³ *Ibid.*, p. 55.

usually acquired in the seventh and eighth years. The engaging toothless grin of seven- and eight-year-olds is the familiar result of this transition period in teeth.

Although the cause of tooth decay is not unequivocally established, scientists agree that its occurrence may be markedly reduced by an adequate diet during infancy and childhood. An adequate diet for the primary child, in all probability, is one that supplies one quart of milk a day, an egg, a serving of meat, two vegetables, fresh fruit, butter, some rich source of vitamin D, and sufficient additional foods to meet the child's energy requirement. Such a diet will promote healthy growth as well as guard the teeth against decay. That sunlight is likewise a factor is indicated by the increased amount of tooth decay following the cloudy winter months.

Nutritional Condition.— There are, to be sure, large numbers of healthy school children in the United States. They are far more numerous than the children in poor health. But the ideal should be the best health possible for every child.

An extensive survey of almost two million English school children⁴ showed approximately two to three in one hundred to be either "malnourished, requiring treatment" or "undernourished, requiring observation." Except in certain counties no increase over previous years in the extent of malnutrition was reported. In Manchester there seemed to be a decided advantage in living in the suburbs, unless, perhaps, the superiority in health there meant that the more sturdy families tend to move to the suburbs. A ten-year-old boy living on a suburban estate was, on the average, two and three-fourths inches taller and five pounds heavier than a boy living in a congested part of the city, while a girl in the suburbs had a still greater advantage in weight. The same advantage was likewise shown in gains in weight.

Vitamin deficiency is much more widespread than is

⁴[Anon.], *The Health of the School Child*. Annual Report of the Chief Medical Officer of the Board of Education for the Year 1934. London: H M S O, 1935.

usually assumed. A survey⁵ of 404 children six to fifteen years of age, selected at random from rural and urban schools and from various economic levels, were tested for vitamin A deficiency. Of the rural children, 36 per cent; of the village, 63 per cent; of the higher socio-economic status, 66 per cent; and of the poorest urban group, 89 per cent showed vitamin A deficiency as indicated by the test. After treatment with carotene or halibut liver oil those reacting abnormally were restored to normal reaction within a month's time. A single well-considered addition to the diet, such as milk or ripe bananas, has been found to increase the gain in weight and to improve the general nutritional condition of children.

Practice in healthful living lags behind theory. Surveys of dietary habits, sleep, and recreation show that a large percentage of children subsist on inadequate diets; sleep from one to seven hours less than the amount considered optimal; and engage in very little wholesome recreation.

Physical Defects.—Even though health programs have worked toward the goal of optimum health for school children, surveys indicate that the goal is still far in the future. Even easily remediable defects are still common. Among slightly more than five thousand elementary school children in one city⁶ three-fourths showed one or more significant physical handicaps. More than half needed dental attention. Hypertrophied or diseased tonsils and adenoids ranked third in frequency, with the highest incidence of this defect at nine years of age. Approximately one-fifth had defective vision, and it is probable that an almost equal number had some marked hearing defect. Disturbance of the thyroid gland was reported in almost 5 per cent of the children examined, with the highest incidence in the eighth grade. As in other surveys, defects of the teeth and eyes, malnutrition, diseased tonsils, and adenoids were the most

⁵ P. C. Jeans and Z. Zentmire, "The Prevalence of Vitamin A Deficiency among Iowa Children," *The Journal of the American Medical Association*, CVI (March 21, 1936), 996-997.

⁶ C. C. Payne, "Physical Handicaps of the Present Day Child," *Ohio State Medical Journal*, XXXII (January, 1937), 24-27.

common health difficulties revealed by present methods of examination

The incidence of heart disease among 86,000 school children in New York State was found to be five per thousand.⁷ The primary school years are not too soon to begin the examination of the hearts of school children and the prevention of rheumatic infection, which is said to be the most frequent cause of heart disease. The physician, teacher, and parent, however, must not give the children examined a feeling of anxiety about their physical condition, but rather direct their attention toward positive health habits

The lack of standardization in measuring and reporting physical defects makes it impossible to obtain a highly accurate picture of the prevalence of defects among school children. The technics of medical examination, however, are continually being improved⁸

The physical defects of primary children should be discovered and corrected early. Diseased tonsils and adenoids, for example, send toxic substances into the blood stream which may cause rheumatism, heart trouble, and other serious conditions. There is some evidence from case studies that children suffering from adenoids tend to be apathetic, inattentive, and irritable.

Frequently colds, difficulty in breathing, and breathing with the mouth open indicate to teachers and parents the need for referring a child to the proper medical authority for examination. Only a physician of good training and high standards should be permitted to examine the child and administer treatment.

Illness. — Palmer⁹ has suggested that frequency and duration of illness may be used as a practical measure of physical

⁷ J. V. DePorte, "Heart Disease among Children of School Age," *New York State Journal of Medicine*, XXXI (May 15, 1934), 448-450.

⁸ Harold C. Stuart, *Healthy Childhood*. New York. D. Appleton-Century Company, 1933.

⁹ Carroll E. Palmer, "The Relation of Body Build to Sickness in Elementary School Children," *Proceedings Seventh Annual Meeting, American Association of Public Health, American Journal of Physical Anthropology*, XXI (Supplement) 7, 1936

fitness rather than such static measurements of body form as height and weight. Freedom from illness is the most obvious index of functioning health. As a standard, however, it falls below the ideal of maximum "vim, vigor, and vitality," and involves community as well as personal factors.

Illness is, without doubt, related to personality in subtle ways not yet defined. An illness, such as influenza, is likely to leave a child somewhat weak and depressed, easily discouraged by difficulties, and dissatisfied with home and school.

The prevention of communicable diseases in the primary grades is a serious problem. The general procedure may be illustrated in the case of tuberculosis. Prevention of tuberculosis in childhood is accomplished by two principal means: diminishing the possibility of contagion and increasing the child's resistance. The procedure includes the following features:

1. Separate the child from the focus of contagion in home, school, or neighborhood as early as possible.
2. Improve the living conditions in the home.
3. Provide open-air camps and preventoriums which will benefit the general physical condition of children.
4. Give the tuberculin test, especially after the child has had a severe attack of influenza, measles, or whooping cough.
5. Experiment further with the B C G vaccine as an important additional factor in the prevention of the disease.

In case of an outbreak of diphtheria in a school a combination of three methods of control has proved effective: (1) Schick tests and immunization, (2) detection and temporary isolation of carriers, and (3) routine daily inspection of pupils for new cases over a period of three and a half months. With our present effective methods of prevention diphtheria may well be considered a disgrace to any community.

Headache is a symptom of some underlying condition, such as the onset of some serious illness, eye strain, fatigue, malnutrition, or anemia, decayed or impacted teeth, sinus

or other infection, enlargement of the pituitary gland causing pressure against its bony case, or a reaction to worry or disappointment resulting in emotional disturbance. Headache, therefore, cannot be treated directly. The specific cause of the headache must be discovered and treated. Attention to diet, regulation of bowel movements, correction of physical defects, and rest and avoidance of excitement are usually effective general measures.

Safety.—Among children under fifteen years of age about twice as many deaths are caused by accidents as by measles, scarlet fever, and diphtheria. The leading cause of accidents among children is the automobile.

MOTOR SKILLS ACQUIRED IN THE FIRST THREE YEARS OF SCHOOL

Large-muscle Activity.—Running, dancing, climbing, skating, and other motor abilities afford much pleasure and profit to primary children. They delight in strenuous physical activity. Children in the first and second grades enjoy imaginative rhythms such as the following: "Run, run, run, little pony, run. Trot, trot, trot, little pony, trot. Gallop, gallop, gallop, little pony, gallop." These actions are performed in time to music. Skipping to music, which was so difficult for the preschool child, can now be done with ease. Climbing in progressively higher and more difficult places is attempted, and should be accompanied by improvement in balance. Skating on single runners is now possible. With practice the six-year-old child can ride the bicycle which did not interest him a year earlier.

After the preschool period the question in regard to these skills is "What do children of this age like to do?" and "What advance have they made?" rather than "What can they do?" In the preschool years they have already learned to walk, run, climb, drive nails, throw balls, build imaginatively with blocks, and play with their toys. Which of these activities do they like best in the primary period? Active running games are in high favor. The interest of both boys and girls in hide-and-seek and tag—two typical games

of chase — increases from six to nine. Interest in toys decreases. An eight-year-old will probably prefer tag to toys. At the end of this period interest in games of chase is at its height. Playing ball is, perhaps, the boys' favorite game; and playing house, the most popular play activity among girls. The popularity of ball games tends to increase slightly from the fifth to the eighth year, and the popularity of playing house to decrease. The following play activities are likely to be popular with six- and seven-year-old girls:

Playing house	Playing hide-and-seek
Playing with dolls	Jumping rope
Playing school	Playing tag

Interest in playing with dolls decreases slightly from the sixth to the eighth year, and suddenly declines after the twelfth year. Playing tag, hide-and-seek, jumping rope, and playing school continue to be popular during the primary period.

The play activities likely to be popular among six-, seven-, and eight-year-old boys are the following:

Playing ball	Playing horse
Playing tag	Playing school
Playing hide-and-seek	Playing marbles

Although certain games are popular with both boys and girls, a few differences between the sexes are found. "It's only girls who play with dolls" seems to be true in our culture. Jumping rope, playing "Here we go round the mulberry bush" and "Ring around a rosie" also seem to be exclusively girls' games; football, playing horse, playing marbles, and playing train, boys' games. At eight years both girls and boys are interested in running races. Sex differences should not be discouraged. Each sex should attain a clear idea of their respective future masculine and feminine roles.

Although ball games, dolls, running games, playing house, and playing school are engaged in most frequently, many other play activities are prevalent among boys and girls

in the primary grades. These play activities are common to many children, but will vary from group to group, with environmental opportunities and customs. Primary children have more interests, and play more kinds of games than do preschool children.¹⁰ They are extremely active. Children at this period tend to be interested in the active and personal sides of life, in movement rather than in form, and in the relation of a thing to themselves.¹¹

Finer Muscular Co-ordination — An indication of finer muscular co-ordination is given by the original Stanford-Binet Test of tying a bowknot. This test was passed by 35 per cent of the six-year-olds, 69 per cent of the seven-year-olds, and 94 per cent of the nine-year-olds. This test shows that tying shoe laces is difficult but not impossible for many six-year-old children. There is some experimental evidence that even the feeble-minded are not much below the normal in manual dexterity, as shown in hand-eye co-ordination.¹⁰ The more complicated the type of physical activity, however, the higher the level of intelligence required.

Constructive Ability of Primary Children. — Primary children like to mould clay into candlesticks, bowls, animals, and other objects, useful and ornamental. They use wood in constructing wagons, doll houses, furniture, boats, book ends, and other useful articles. They use paper in making books, boxes, and toys. They enjoy making cookies and simple dishes, such as applesauce, cup custard, and stuffed fruits. They use unbleached muslin, gay cretonne, and cambric in fashioning the aprons they wear in school and the costumes they need in plays. Primary children should not be permitted to do fine sewing. In the case of a given child an increasing control over materials should be evident from grade to grade. Children show marked differences in skill and creative ability.

The chief value of handwork is not in the skill gained

¹⁰ Harvey C. Lehman and Paul A. Witty, *Psychology of Play Activities*. New York: Barnes and Company, 1927.

¹¹ E. D. Mitchell and B. S. Mason, *Theory of Play*. New York: Barnes and Company, 1934.

in using material, and the aim is not a finished stool or an evenly stitched apron. It is rather to provide the physical and mental activity which is satisfying to a child and to bring him in contact with the raw material and the processes by which the material is made into articles of everyday use. Insight and understanding are more important outcomes of activities than technic. The head as well as the hand profits by "handwork." One group of first-grade children made a playhouse out of a large wooden box. They laid the floor, painted the walls, wove the rugs on a simple hand loom, furnished it with useful articles, hung curtains at the windows, and made pottery dishes for the table. Another first grade group made a village of smaller boxes. Each child made his own doll's house, using originality in planning and furnishing it. Traffic signals were put on the streets. Electric wiring of a simple kind was installed with the help of the electrician. These activities suggested many questions about life today and in former days, furnished opportunities for reading, for measurement, for writing, and for the application of art principles and health rules. A second grade group made pottery and Indian costumes in connection with their study of Indian life. A third grade wove cloth, made candles and simple articles of furniture, similar to those made in the Colonial period which they were studying.

Activities Observed One Morning in a Kindergarten. — A description of the activities of children in a kindergarten will add concreteness to the previous general account of the play and constructive activities of primary children.

One group was seated at a low table painting with Japanese brushes and tempera paint.

Another group was making dresses and bags of colored cambric.

One child walked across a plank six inches wide, elevated about one foot. He walked the entire length, laughed aloud, and skipped away.

Two children were sitting in a swing hung in the doorway. A third child was pushing them.

Two children were working at the carpentry bench, sawing and hammering

One boy was building a house of large kindergarten floor blocks. When the walls grew beyond his reach, he used a stepladder. When he was unable to reach with the stepladder, he put two blocks of wood under the ladder to make it higher. He laid boards across the top of his house for a roof. "Now we have a big building," he said.

Two girls were playing in the house which the boy was building. One brought a bed with two dolls in it into the house.

One child was painting a large picture on an easel

At 10:10 A.M. three notes were sounded on the piano. The children stopped their activities, while the teacher said quietly, "Now it is time to put away your things and get ready for a story."

When groups had gathered together, the teacher told them that the principal, who had been talking to her, wanted to know how many of the kindergarten children tied their shoe laces so that they stayed, washed their hands on the backs and wrists, and did other things that first-grade children were expected to do. The teacher then told a story about some rabbits.

After the story the children went to the dressing room to wash their hands, one group at a time.

After washing the hands one child got a box of napkins and plates, picked up a napkin with one hand and a plate with the other, put the plate on the napkin, and gave them to a little girl who was to place them at each child's place on the table.

The children got their bottles of milk, took off the caps (which had already been loosened), put the caps in the waste paper basket, put straws in the bottles, and carried them to their places at the table.

When one child spilled some water on the floor, she got a mop and wiped it up.

When all were ready, they said "grace," drank the milk,

and ate the crackers. Some children had orange juice in place of milk.

After the midmorning lunch each child put a blanket on the floor and lay down to rest for fifteen to twenty minutes.

They then carried their chairs to the piano and sat down. The teacher sounded a few notes on the piano and in a quiet voice told the first row of children they might skip to the music, which they did. The teacher suggested that they let their arms hang loosely. They tried again. The teacher repeated the same suggestion, and let one boy who skipped very well, perform by himself while the others watched. Other groups of children skipped or danced to different rhythms, some with an imaginative element in them.

After a half-hour the teacher showed the group the fans and pictures and other articles the children had made. The teacher made some comment about each one. One candlestick, for example, was made by a little girl for her grandmother who makes all her clothes. The children were very attentive.

The children then carried their chairs back to the tables. Each child picked up his chair by the back holding it directly in front of him.

They sat down in their places to listen to a few short announcements before going to their cupboards to change their shoes.

Handwriting. — In the first grade the child has little use for writing. He writes or prints his name on his drawings and other belongings and beyond that feels little need for writing ability. Without a felt need for the skill learning is inefficient. Moreover, readiness for writing involves a certain degree of co-ordination and perceptual acuity which is probably not attained below a mental age of seven and one-half or eight years.

There is a happy medium between the one extreme of giving formal drills in handwriting before the children have the maturity or interest to profit by the practice, and the other extreme of neglecting systematic instruction until careless habits are fixed and other interests usurp the attention

that earlier might have been given to the acquisition of skill in writing. In the first and second grades a child may be given individual help in writing a report of some experience or in sending a message to someone. Large sheets of paper and good-sized writing instruments will permit the use of large muscles and freedom of movements that are natural to young children. If all the children in a group wish to learn to write a letter or a story, they may be taught the specific sentences they wish to communicate. The best practice appears to be to introduce writing in the primary grades whenever the children feel the need of it as a tool of communication, and to provide opportunity for systematic practice with instruction as more skill is needed.

The printed form of writing called manuscript writing, although considered preferable for beginners, is, in some ways, inferior to cursive writing for general adult use. Freeman¹² recommended that the change from manuscript to cursive writing be made in the latter half of the second grade.

Standards in handwriting for the primary grades vary with the teaching practice in the school.¹³ Legibility is of first importance; speed of secondary consideration. Individuality in the handwriting is acquired after the mechanics of forming the letters have been mastered. Legibility and good form may be measured on the Ayres Measuring Scale for Handwriting, part of which is reproduced on page 341. The numbers indicate the quality of the particular sampling of handwriting presented. It does not follow that all primary children should reach a given quality at a given speed. In teaching beginning writing there is a tendency for many teachers to strive too much for perfection.

Drawing. — By the time a child enters school, he has usually passed through the scroll or scribbling and the line stages and has learned to draw a picture of a man which can

¹² Frank N. Freeman, "An Evaluation of Manuscript Writing," *Elementary School Journal*, XXXVI (February, 1936), 446-455.

¹³ W. W. Beatty, "Manuscript Writing, an Effective Tool for Adult Life," *The Nation's Schools*, XVIII (September, 1936), 30-32.

be recognized as *genus homo* by others besides the artist. He will no longer draw something resembling a washtub and ask his mother to write under it, "This is a kitty." He can draw a tree or a house which an adult without inside information can identify. A child finds satisfaction in art work of many kinds because he likes to be physically and mentally active and to make something for himself or his family. "Drawing is still a form of silent language, not a form of art." His drawings at this age usually tell a story which he wants others to understand. He must accordingly see clearly how things look and control his pencil, brush, or crayon sufficiently to translate to paper the objects involved in the story he wishes to tell.

A child's drawings show not only the extent to which he can govern his hand muscles, but also the quality of his observation. Like primitive people, primary children tend to draw everything they know about an object regardless of whether or not it can be seen from a given point of view. Only one leg of a man on horseback can be seen from the side. But children and primitive people know that the man has two legs, and they show both legs in the picture.

Children draw large the detail that is most interesting to them. If a child is more interested in the flower by the house than in the house, he will draw the flower bigger than the house. As faces are the most interesting part of the body, the child usually draws them large in proportion to the trunk and limbs. Children draw the things that are attractive to them. Boats, trains, autos, fire engines, houses, and people are the most popular subjects of children's drawings. Bright colors also are favored.

Primary children are uncritical and enthusiastic about their works of art. They do not worry if their drawings are not exact representations of the objects. If the picture tells a story or satisfactorily supplements their speech, they are well content.

The drawing must be done quickly because ideas do not linger long. Attention shifts rapidly from one thing to another.

Ability in art, in general, develops along the line of increasing technical control, accuracy of perception, and creative imagination. Little children use sand as a medium; older ones, clay; still older ones, plaster. Especially interesting to children is the making of useful articles decorated with designs in water color or oil paint, block painting, batikking, and tie-and-dye work. In such art mediums they express their changing interests, imagination, and personality.

Some pictures, lovely in form and color, have been made by primary children. One issue of *Progressive Education* contains excellent examples of superior art work of children and a stimulating discussion of the creative spirit in school art.¹⁴

Standards of achievement in drawing are difficult to set up because each work of art is unique. Thorndike's *Scale for General Merit of Children's Drawings* (Teachers College, Columbia University, 1923), contains specimens of actual drawings of pupils of grades three to eight, or ages eight years to fifteen years, and suggests the great variation to be found in children's drawings. This scientifically made drawing scale measures technic, not the creative quality nor the appreciative side of art. The McAdory Art Test which has been widely used in the upper grades has been standardized for children in the second and third grades. The extension of the test to lower grade levels has apparently not impaired the validity of the test. A scale for the measurement of children's paintings has been devised by Tiebout.¹⁵ It is based on the judgment of the artistic quality of samples of paintings made by children in the first seven grades. Two groups of judges agreed very closely on the ranks to be given to these paintings. It is difficult to measure the aesthetic individual quality of a work of art. It is felt

¹⁴ "Creative Expression through Art," *Progressive Education*, III (April, May, and June, 1926), 97-194. See also *Art Activities in the Modern School*, by Florence W. Nicholas, Nellie C. Mawhood, and Mabel B. Trilling. The Macmillan Company, 1937.

¹⁵ C. Tiebout, "The Measurement of Quality in Children's Painting by the Scale Method," *Psychological Monographs*, XI\III, No. 1, 1936, 85-94.

rather than measured. It is original and individual, not standardized.

LANGUAGE ABILITY

Size of Vocabulary — Ask a child to write any words that occur to him in fifteen minutes. That is one way of judging a number of inter-related factors: the size of his vocabulary, application to the task in hand, writing ability, and interest. The average number of words per pupil written in fifteen minutes by more than two thousand children in the second grade was seventy-three. In the third grade the average number was ninety.¹⁶

This, of course, is not a measure of a child's true vocabulary capacity. Nor are the words which he uses while he is being studied by an investigator a true indication of all the words he knows. He will know many words which he has not had occasion to use in the observed situations. Accordingly, the usual method of studying a child's total vocabulary is to ask him to tell the meanings of a sampling of words and to estimate his total vocabulary from his knowledge of the sampling.

Estimates of total vocabulary are as low as 793 words for seven-year-old children and as high as 7,425 words for children in the third grade. The central tendency for eight-year-old children is around three thousand words. In the vocabulary test of the revised Stanford-Binet scale a six-year-old child is expected to know at least five of the forty-five words on the list; at seven years and at eight years, at least eight words.¹⁷ A fairly correct idea of the meaning of the words is expected. For example, the following are considered adequate definitions for the words given: an orange, "a fruit"; an envelope, "is to mail"; tap, "you make a little noise"; roar, "a lion roars."

Highly intelligent children have larger vocabularies than children of average ability, provided their background and

¹⁶ Edward W. Dolch, "Grade Vocabularies," *The Journal of Educational Research*, XVI (June, 1927), 16-26.

¹⁷ *Measuring Intelligence*, *op. cit.*, pp. 94, 100.

experience are somewhat similar. Children of the upper social classes are superior in their language development to underprivileged children. This superiority has been found to represent a difference of about eight months in linguistic development. Girls, in general, maturing faster than boys and apparently always more interested in language, tend to have larger vocabularies.

Several kindergarten and first grade vocabulary lists have been compiled. Madeline Horn's ¹⁸ list comprises the 1,000 words most frequently used by kindergarten children; Ernest Horn ¹⁹ has published a similar list of words used by first-grade children. Gates ²⁰ prepared a primary word list built on a composite basis including words contained in primary readers and children's literature, words used by children in conversation, the 2,500 words of highest frequency as determined by the Thorndike count, and additional words in the first thousand of the Horn list and from other studies

Richness of Vocabulary. — By the end of the eighth year the child's vocabulary has increased not only in size but also in richness of meaning. A six-year-old is likely to define a

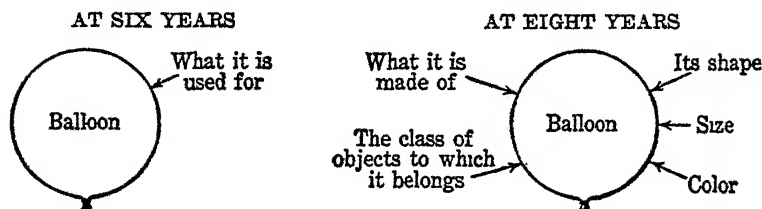


FIG. 3. ILLUSTRATING INCREASE IN ASSOCIATIONS WITH A WORD

balloon as "What you go up in" or "to play with." An eight-year-old can describe the balloon as "a great big thing that goes up in the air with people in it." A six-year-old is

¹⁸ Madeline D. Horn, *An Investigation of the Vocabulary of Kindergarten Children*. Iowa City: College of Education, State University of Iowa, 1927

¹⁹ Ernest Horn, in the *Twenty-Fourth Yearbook of the National Society for the Study of Education*, Part I. Public School Publishing Company, 1925.

²⁰ Arthur I. Gates, *A Reading Vocabulary for the Primary Grades* (revised and enlarged), 1935

likely to say that a tiger is "to eat you up." When he is eight years old he is able to give as a definition: "It's an animal like a big old cat that I saw in the circus." The child's vocabulary grows in richness of associations and vividness with his experiences. A vocabulary acquired chiefly from books as the child grows older will not be as concrete and vivid as the vocabulary acquired in childhood through firsthand experience. The extent to which he incorporates his experience depends upon his intelligence. Accordingly, the language of a child is an important index of his mental maturity and his environmental stimuli ²¹

Some children grow up speaking two languages. One they use in the home; the other, they use in school. In some ways it is an advantage to primary children to speak two languages. It seems somewhat inefficient for a child of foreign-born parents not to learn his parents' native tongue as well as the language of their adopted country. A speaking knowledge of a foreign language is desirable and necessary for many adults. Even a primary child may use his knowledge of a foreign language and its culture and traditions to enrich the experiences of other children in the class, gaining thereby a sense of personal worth through the contribution he is able to make to the group. On the other hand, acquiring two languages may retard the development of the language he uses in school and, in some cases, appears to increase the difficulty of learning to read. Thus, these children from foreign-speaking homes are likely to be slowed up in achievement during the first years of school. Whether they are or not depends a great deal on the neighborhood. If the children play with English-speaking children, they will tend to think in the language in which they play and this will hasten their mastery of English. For that reason children with bilingual backgrounds should have many opportunities to talk and play and work with children who speak the English language, so that they may quickly and

²¹ D. V. McGranahan, "The Psychology of Language," *The Psychological Bulletin*, XXXIII (March, 1936), 178-216.

naturally acquire a functioning English vocabulary. This was the procedure followed in the case of a German boy whose reading in a progressive American school was naturally below the average. For a time no special attention was given to the reading *per se*, but provision was made for his participation in class discussion, group work, and group recreation. The role of bilingualism in lowering the intelligence quotient has probably been exaggerated²² and retardation attributed to bilingualism *per se* may frequently have been due to other factors associated with the foreign home.

Sentence Development. — Ability to carry on a conversation and to give a connected account of some experience improves during the primary period. Children should talk. In group activities children are naturally motivated to express themselves clearly and forcefully. Long sentences appear to be evoked when a stimulating situation is presented.

The maximum language development is attained when a gifted child reacts to a stimulating environment. Especially with the older primary child there is a positive relationship between length of remark and intelligence quotient.

When a child uses a long sentence, he seems to be putting forth his very best effort to express a complicated idea. For this reason long sentences should constitute a valuable measure of maximum ability in the use of language.²³

Only children appear to be more talkative and to use a larger number of different words than children with brothers and sisters. One group of unselected children²⁴ added approximately 1.2 words per month to their vocabulary while only children added the following numbers:²⁵

²² H. S. Hill, "Correlation between I.Q.'s of Bilinguals at Different Ages on Different Intelligence Tests," *School and Society*, XLIV (July, 1936), 89-90.

²³ Edith A. Davis, "Mean Sentence Length Compared with Long and Short Sentences as a Reliable Measure of Language Development," *Child Development*, VIII (March, 1937), 79.

²⁴ *Ibid.*, 69-79.

²⁵ Edith A. Davis, "The Mental and Linguistic Superiority of Only Girls," *Child Development*, VIII (June 1937), 141.

<i>Age in Years</i>	<i>Sex</i>	<i>Mean Number of Different Words Added per Month</i>
5½	Boys	7 4
	Girls	18 2
6½	Boys	0
	Girls	12
9½	Boys	22 4
	Girls	14 8

Language Errors — The development of language ability is indicated by the correctness of the child's speech as well as by the size and richness of his vocabulary, the length and structure of his sentences, and the general effectiveness with which he expresses his ideas. The teacher will hear many language errors, such as "He ain't got none," "She sings good," "I could of gone," in the course of his daily contact with children. A more precise knowledge may be obtained through diagnostic tests.²⁶

Written Composition — The majority of children should be taught a practical kind of composition, such as writing friendly and business letters, outlining, composing a clear and readable paragraph or series of paragraphs of a kind which is useful and interesting to them. The gifted children should be encouraged to do a more creative literary type of writing.²⁷ Some poems with real literary value have been written by primary children.

The following poems were written by eleven-year-old children:

Into the sleeping garden creeps the dusk
Downward wreathing.
Stray wisps of mist behind her waver
And drift away
To hide behind the uny bridge

²⁶ The tests of Memory for Sentences, the Comprehension tests and the Rhymes test of the new Stanford Revision of the Binet Test. Boston, Mass.: Houghton Mifflin Company. The Los Angeles Diagnostic Tests in Language, by C. Armstrong, Los Angeles, California. Southern California School Book Depository. Monroe Reading Aptitude Tests. Boston, Mass.: Houghton Mifflin Company.

²⁷ Hughes Mearns, *Creative Youth*. New York: Doubleday Page, 1925; Hughes Mearns, *Creative Power*. New York: Doubleday Doran, 1929.

The darting dragon fly that swirled and swooped
Above the brook
Has gone to rest among the lotus blooms
All dew-misted ²⁸

—Peggy P. (age 11) Phoebe Anna Thorne School, Bryn Mawr, Pa.

THE DEEP WOOD

It's fun to walk in the big deep woods
And see the trees way above my head
It's fun to get a glimpse of a small squirrel
In a brownish coat of red
It's fun to hear the birds singing
Way up in the trees.
And sway and rock so gently
At every passing breeze ²⁹

Whenever possible, real situations requiring written expression should be utilized. Some classes record daily their group or individual activities. Other classes publish a weekly newspaper containing editorials, stories, poems, news, and pictures, which children in other rooms also enjoy reading. One group was interested in writing book reviews, some of which were published in the literary section of the city paper. Another third-grade group in New York City received a letter from some children in North Carolina, telling about the raising of cotton. The New York City children replied with a letter telling the Southern children about New York City. One book review and part of the letter about New York City follow. Both of these compositions were written by superior third-grade children in the Horace Mann School of Teachers College, Miss Sarah Baldwin, teacher.

BOOK REVIEW

The Cave Twins by Lucy Fitch Perkins

When the Twins frightened their old grandma I think it was very funny. They stay awake one night and Hawk-Eye says he and Limberleg will in the morning cross the river and the blue hills to

²⁸ *Progressive Education*, V (January, February, and March, 1928), 56

²⁹ Unpublished poem written by a third-grade child in the Horace Mann School.

see where the sun comes from The Twins follow them, but they get a spanking

They go out to a little neck of land. There is an earthquake and a mile of land falls into the water, so they can't go back Hawk-Eye makes a boat and goes back to where they used to live He brings their grandma and two boys with him When they go into the new cave, even the fire dances

I am sure everyone who reads this book will like it very much I loved it.

This is the letter from Miss Baldwin's pupils to the children at Rock Hill who wrote to them and sent them some cotton:

The first thing you'll want to do when you come to the city will be to go to Bronx Park. It is just a big chunk of country in a big busy city

Part I

The Park

There are many trees that are as big as houses, that children play under. There are flowers that gleam in the sun which are often on show. It is just like being out in the country

Part II

The Zoo

When you step into the Zoo it is like being in the jungle You are surrounded with animals on all sides. They look fierce and wild but when you come up to them they are as tame as lambs.

Riverside Drive

When you go to New York one of the nicest places you can see is Riverside Drive. It is such a beautiful park. There are lots and lots of trees and grass in it and children who are playing. You can see the Hudson river from the park. Some of the trees are in bloom I have seen some cherry blossoms and also some white flowers but I do not know their name. I play in that park nearly every day. In winter you can coast in the park. There are lots and lots of boats in the Hudson river. Now I have told you a lot about Riverside Drive and its park.

READING ABILITY

Reading

may be one of life's inexhaustible pleasures and blessings, but may also become a mere habit, an escape from thinking, or a drug.³⁰

³⁰ Walter de la Mare, *Early One Morning in the Spring*, p 316 New York: The Macmillan Company, 1935

It certainly is one of the most important accomplishments of the elementary school years.

Children enter the first grade with widely different readiness for reading. Some children show no interest in books. If free to choose, they do not pick up a book in preference to other kinds of occupation. Other children are interested in looking through picture books and in knowing the meaning of printed signs about them. Still others have acquired the idea that one can get stories from reading and have already begun to identify certain words and phrases in the books that have been read to them.

A number of factors contribute to a child's readiness to read. Among these are his mental maturity, his physical condition, his language ability, and his previous experiences with reading material. Some children are mentally more mature than others. They are able to see similarities and differences in the appearance and sounds of words. In order to supply the other children with the pre-reading experiences that they need, the months before Christmas in the first grade are frequently spent in constructive work, social activities, active play, looking at books, listening to stories told or read by the teacher, selecting stories for the teacher to read, and similar activities. After this period, more systematic instruction in reading may begin.

Among the physical factors most closely associated with ability to learn to read is good eyesight. Visual acuity appears to be related to good reading. It is especially important when children are taught by the "look-and-say method" and of less importance when they are taught by a phonetic method.³¹ The reverse was found to be true in the case of auditory defects.³² Children with some loss of hearing were handicapped in learning to read by the phonetic method. Obviously, reading instruction should wait upon the correction of these visual and auditory defects.

³¹ Paul Fendrick, *Visual Characteristics of Poor Readers*. New York: Teachers College, Columbia University, 1935.

³² Guy L. Bond, *Auditory and Speech Characteristics of Poor Readers*. New York: Teachers College, Columbia University, 1935.

There has been considerable discussion regarding the relationship of handedness and eye-dominance to reading. A definite relationship has not yet been established by experimental work.³³ By the time children enter school, they show differences in the degree to which they use the preferred hand. There is not, however, an invariable correspondence between hand preference and eye preference.³⁴ Although right-eyed children are usually right-handed, right-handedness does not guarantee dominance of the right eye. In other words, a child may be right-handed and left-eyed. There was less correspondence between eye-dominance and handedness in left-handed children. Eye-dominance seems to be more closely related to reading ability than does hand dominance.

If a child is not physically or emotionally handicapped and if he has a good comprehension of oral speech and ability to use language with precision and clarity he is likely to learn to read easily. Children who are familiar with the phraseology of stories will anticipate meaning in the stories they begin to read. As soon as they get a cue to a word or phrase they will be able to complete it correctly.

Experiences with books and other kinds of reading material likewise make for readiness. If the children have learned to recognize signs and to follow printed directions in their environment, they will have acquired the idea that printed words have meaning. Through looking at the book while someone reads to them they will learn that the eyes move across the page from left to right and swing back to the line below. They will be able to get the general meaning of certain frequently recurring words and phrases if the adult reads slowly and points them out to the child.

If a child has not had these experiences and acquired a readiness for reading, the teacher should begin with these

³³ A. I. Gates and G. L. Bond, "Relation of Handedness, Eye-Sighting and Acuity Dominance to Reading," *The Journal of Educational Psychology*, XXVII (September, 1936), 450-456.

³⁴ Ruth Updegraff, "The Correspondence between Handedness and Eyedness in Young Children," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLII (June, 1933), 490-492.

pre-reading activities before attempting to teach reading. In this way children will be prepared for learning to read and become interested in the process at the normal time. If children are not stimulated to read by the age of seven or eight years, they may become absorbed in acquiring other skills, or become interested in other things, or feel so inferior in a group of children who know how to read that they are ashamed to begin to learn. For those reasons, certain progressive schools which previously delayed systematic instruction in reading until the child manifested a definite desire to learn to read, have adopted the policy of emphasizing reading skills with all children in the school program of the second grade.

In view of this variation in the ability and readiness of individual children and in view of the variation in policy and practice with respect to teaching beginning reading, it is obviously impossible to set up age grade standards of accomplishment which would be appropriate for all schools. The norms given for primary reading tests represent the average achievement of large numbers of children on the kind of material used in the tests. The test norms, however, do not necessarily represent the ideal achievement for a particular group.

In schools in which reading instruction is based on adequate pre-reading experiences and sufficient mental maturity, with a resulting delay in actual reading, the children may show slight achievement on tests in the first and second grades, but after the third grade tend to equal or surpass the scores of children who have been pushed into formal reading, without considering the individual child's needs and capacities.

Some time between the second and fourth grades children begin to read silently more rapidly than orally. They begin to comprehend what they read faster than they can speak. Continuing extensively to read "out loud" after this point may retard their speed in silent reading.

"Slow and sure" is not usually true in reading. When two children read carefully, the one who reads the faster usually

understands the passage he has read better than the slower reader. "Fast and thoughtful" is a more usual combination than "slow and sure."

The number of pages read in each of the first three grades has been ascertained by investigators, but no average figure is very helpful because of differences in individual children's interests and capacities as well as differences in the school program. Some children may read with profit 300 pages during the first grade, others may be engaged in activities of greater worth to them; and still others may read avidly all the easy material that falls in their way.

More important than the number of pages read or the speed with which they are read are the reading habits and reading interests established in the first and second grades. The habits of reading to get the meaning of the passage, of reading for enjoyment and information, and of making good choices of reading material should be objectives held in mind by the teacher more constantly than rigid standards of speed and ground covered.

What kind of books are children in the first three grades most interested in? Dunn³⁵ found that surprise and plot appealed to both boys and girls. Boys were keenly interested in stories about animals. Girls liked stories about children and familiar experience. Girls liked stories having repetition and conversation better than boys did.

Of the selections used in Dunn's study the most popular one with boys was the story of George Washington and the colt. This has a good plot about boys and animals and also offers a real surprise when the colt suddenly drops dead. Although this story has little literary value, it is a favorite with primary boys because of the interest factors of surprise, plot, and animals. According to another study, one of the most popular poems in second and third readers was the one about the "two little kittens one stormy night" who "began to quarrel and then to fight." This poem also has the same three interest factors of surprise, plot, and animals.

³⁵ Fannie Wyche Dunn, *Interest Factors in Primary Reading Material*. New York: Teachers College, Columbia University, 1921.

Although the primary children in these studies showed a decided preference for prose, this preference may be due to the type of poetry read. Poetry that has the elements mentioned above would probably be interesting to children.³⁶

NUMBER

Children likewise bring different degrees of readiness to their first arithmetic lesson. They acquire knowledge of numbers incidentally in their everyday living. They acquire number experiences naturally as they mature mentally.

The tendency at present is not to force arithmetic in the first grade, but to teach only such number work as children need in their activities. In giving out pencils to children in a row they learn to count; in forming groups of three and four they gain experience with groups of numbers; in constructing and furnishing a playhouse they learn to use inches and feet correctly; in buying stamps and reading the thermometer, they learn to count by two's; in buying their midmorning lunch, they gain practice in simple addition and subtraction. Children need to tell the time in order to follow the daily program; they gain number experience in keeping score in games. If they cook, they have to know the amount of each ingredient to use. The skilful teacher in the primary grades encourages active participation in many kinds of number experience, and gains a detailed knowledge of each child's achievement through observation of him in these natural situations. Through such observation as well as through standardized and informal tests the teacher can ascertain what knowledge pupils already possess, and thus avoid unnecessary interest-destroying repetition and waste of time in drilling facts already familiar to the children.³⁷

In the second grade the teacher should continue the process of keeping up with every child's experience with numbers

³⁶ Miriam B. Huber, H. B. Bruner, and C. M. Curry, *Children's Interests in Poetry*. Chicago: Rand-McNally and Company, 1927. Also Lucy Kangley, *Poetry Preferences in the Junior High School*. New York: Teachers College, Columbia University, 1938.

³⁷ L. J. Brueckner, "Certain Arithmetic Abilities of Second-Grade Pupils," *Elementary School Journal*, XXVII (February, 1927), 433-443.

and helping him to grow in number ability. The year's achievement should be estimated in terms of individual growth. Hildreth³⁸ suggested an initial check on the following accomplishments:

- Counting by 1's, 2's, 5's, 10's, and other groupings if the child shows proficiency in this exercise.
- Addition combinations to ten or over.
- Simple oral reasoning problems.
- Telling time.
- Measuring in inches
- Writing numbers.
- Illustrating the meaning of number terms including one-half, one-third, one-fourth

The learnings of the second grade should merge into accomplishments at the third-grade level. The class activities still provide experience with number and problems to solve. Progress should be expected in a clearer idea of number concept, increased ability to estimate the approximate answer to a problem, more skill in reading material involving numbers, and greater speed and accuracy in computation and problem solving

THE PROBLEM OF FAILURE

In traditional school systems which promote on the basis of achievement the largest percentage of failure occurs in the first two grades, and the percentage of non-promotion diminishes until the pupils reach senior high school.³⁹ The concept of placement on the basis of arbitrary standards of accomplishment is gradually being replaced by the concept of placement for the best adjustment to individual needs and capacities. With the latter point of view retardation rarely appears to be the best adjustment to make for a particular child. Either the repeating experience is in itself unfor-

³⁸ Gertrude Hildreth, *Learning the Three R's*, p. 175 Philadelphia: Educational Publishers, Inc., 1936

³⁹ Paul R. Mort and W. B. Featherstone, *Entrance and Promotion Practices in City School Systems. Standards and Accounting Procedures*, p. 46 New York: Teachers College, Columbia University, 1932.

tunate or the factors responsible for failure, such as unfavorable comparison with siblings, visual and other physical handicaps, home tradition of failure, poor beginnings in other school systems, are not eliminated. Better results have been obtained when the children were permitted to go ahead from the point at which they had left off.

MENTAL DEVELOPMENT

A child's behavior may be considered intelligent to the extent that he can find appropriate solutions to a variety of difficult, complex, socially useful problems with reasonable speed and a certain amount of originality. In the primary grades there are many opportunities for showing intelligent behavior of this kind. By the age of six years the brain has attained 90 per cent of its final weight. Exactly what this anatomical evidence of maturity means in terms of mental functioning has not been precisely estimated.

Growth in Intelligent Behavior.—During the primary period and up to about sixteen years of age children continue to grow mentally at a fairly constant rate, as measured by current tests. These tests are a composite sampling of various kinds of abilities. The growth curve would vary with the particular items included in the test. As yet, mental growth curves derived from the performance of different kinds of tasks are not available. Even though the total scores on the test are the same for two individuals, the organization of abilities may be different. For example, certain items that are difficult for normal children might be easy for older mental defectives of the same mental age, and *vice versa*. The intelligence quotient itself does not have a constant meaning when computed from different tests or on children of different ages.

Factors Affecting Mental Growth.—Mental growth is modified by a number of factors. A tendency has been reported for children with behavior problems tested during the latter part of the primary period to lose in intelligence rating after an interval of from five to twelve years. There is some evidence that a gain in intelligence quotient may be

associated with improved emotional control and with a more favorable attitude on the part of parents. Although improved nutrition definitely results in improved physical condition, convincing evidence has not yet been presented as to the effect of nutrition on mental ability. One group of twenty-five underweight children, as a result of a program of health lessons, school lunches, and various motivational devices, gained in weight 26 per cent more than would normally be expected, but failed to show any corresponding gain in intelligence quotient.⁴⁰

As our inclination is to expect improved mental functioning as a result of improved nutrition, the negative results of the few investigations with children are accepted reluctantly. And they are, indeed, inconclusive. Certainly, this problem should be studied intensively with individual children over a period of years, beginning with an initially poor diet and studying the psychological effects of specific dietary changes.

A child tested at six years of age will be likely, under fairly constant environmental conditions, to have about the same general level of intelligence if tested three years later. Some investigators have found greater fluctuation with children of superior intelligence than with children of average or inferior mental ability, but it is only occasionally that the school child initially classified as gifted falls to the average or inferior level during adolescence. In individual cases the intelligence quotient has shifted twenty to thirty-five points in either direction. The most extreme cases that have come to the writer's attention are variations from 90 to 145 I.Q. and from 62 to 90. In a class of average size one child may possibly change his intelligence quotient on retesting twenty or more points—a degree of change that would seriously modify any academic recommendation made on the basis of one initial test.

In these cases many different factors, apart from errors in the administration of the test, may account for the incon-

⁴⁰ Annie J. Smith and Ada M. Field, "A Study of the Effect of Nutrition on Mental Growth," *The Journal of Home Economics*, XVIII (December, 1926), 686-690.

stancy of the intelligence quotient. The first test may have required no reading ability, the second test, high proficiency along that line. The first test may have emphasized speed, the second test may have allowed unlimited time. The child may have been emotionally inhibited on certain occasions.

When school education is inferior, the scores of children on group intelligence tests are likely to be below average. That is one reason why rural children and Negroes, in general, score lower on intelligence tests than urban children. These environmental conditions are usually associated with lack of intellectual stimulation and a dearth of problems that demand the use of intelligence. The occupational status of parents is another factor that enters into this constellation associated with low scores on intelligence tests. Moreover, the tests themselves are unfair to certain groups of children insofar as they involve experiences that are less familiar to them than to the children on which the tests were standardized. In an excellent school system a tendency for the intelligence quotients to increase slightly from grade to grade is sometimes found. A still more marked gain may be achieved by placing children in superior homes at an early age. A small part of this gain may be due to the fact that the children become more "test wise" with each succeeding examination.

Relationship between general intelligence, scholastic achievement, and musical talent is low but positive. The relationship is more marked with extremes of ability. Individuals who possess exceptional musical ability, as a group, tend to be far above average in intelligence and school achievement.

Three more specialized manifestations of mental ability are memory, imagination, and reasoning.

Memory. — Children generally show an increase in the ability to memorize as they grow older. With meaningful material adults have a decided advantage over children. Perhaps children have acquired their reputation for good memories because they frequently memorize material as "the easiest way out." Memorizing a history lesson requires

less effort than studying it imaginatively, grasping the main ideas, and telling them in one's own words. Overemphasis on verbal memory in this period may mean underemphasis in true thought-getting.

The majority of seven-year-old children can repeat five digits, such as 3-1-7-5-9 in the correct order immediately after hearing them once. Eight-year-olds can be expected to answer five out of six simple questions on a story one paragraph in length and can repeat without error a sentence of about sixteen syllables after hearing it once.

Words and sentences with pleasant associations are easier to learn than words with unpleasant associations. Evidently, the emotional quality of words affects the efficiency with which children learn them. Memory for movies is high. Eight- and nine-year-old children, tested on their knowledge of movies they had seen, recalled 60 per cent of the content as tested; eleven- and twelve-year-olds recalled 75 per cent; and children fifteen and sixteen years old, 91 per cent. Memory is probably related to the qualities of perseverance, fluency, and attention.

Attention.—Fluctuations in the attention of primary-age children vary enormously. In a small class one child may maintain his attention to a task for an hour with only one interruption, while another, in the same length of time may show more than one hundred interruptions in attention. In terms of attention span this means a common attention span of one-half to two minutes and more rare attention spans of from ten to fifty-six minutes. When engaged in interesting occupations, such as building, six-year-old children were observed to maintain their attention voluntarily for three-quarters of an hour. As the child grows older, the continuity of attention increases. Girls over eight years of age appear to maintain a longer attention span than that of boys of the same age.

Imagination — The primary period is generally said to be a time in which fanciful imagination flourishes, and in which fairy tales and myths satisfy a need of childhood. Some studies of children's interests in reading, however, show

a preference for stories about children and familiar experiences. Imagination is a prominent part of doll play which flourishes in this period. The majority of children may find the greatest value in the useful kind of imagination which helps them to "work out plans in their heads," to put themselves in "the other fellow's place," and to picture accurately enough for practical purposes, objects not present to the senses. Firsthand experiences with objects and people, models, pictures, diagrams, and maps help to develop this constructive type of imagination.

Many children spend considerable time in phantasy. Griffiths⁴¹ studied the phantasies of children by observing them at play and by noting their responses to situations which she set up. She watched children and talked to them as they drew pictures for her. She used the Rorschach ink blot test to ascertain whether a child's ideas were standardized or original, asked children to tell her stories, and to describe what they saw when they put their hands over their eyes. She also obtained from them an account of their dreams. Children's daydreams appear to be part of their normal development and to fit into their total pattern of thought and action. Daydreams are, however, a path of least resistance. They require less energy and effort than action and may too often be substituted for action, thus becoming a compensation for reality and a means of easy wish fulfillment.

Many children have imaginary companions, some of whom achieve intense reality in the child's experience and exercise as much influence on his life as an intimate real companion would.

Dreams. — It is reasonable to believe that dreams arising from the cares and problems of the day may be supplanted by dreams suggested to the child just before he goes to sleep. This kind of suggestion therapy was applied by Wile⁴² with good results. It appears to be valuable in the treatment of

⁴¹ Ruth Griffiths, *The Study of Imagination in Early Childhood*. London: Kegan Paul, 1935

⁴² Ira S. Wile, "Auto-Suggested Dreams as a Factor in Therapy," *The American Journal of Orthopsychiatry*, IV (October, 1934), 449-463.

a special type of fear dream, based on earlier conscious experience. Troubling night dreams may also be lessened by assisting the child in learning to solve the day's problems better. Vivid night dreams that arouse intense emotion may color the day's occupations and even interfere with the efficiency of the child's functioning.

Reasoning. — "Many hands make light work," said Phebe's aunt to the children who were helping her shell peas.

"Yes," said seven-year-old Phebe, "but 'too many cooks spoil the broth'."

Many more or less subtle examples of reasoning may be observed in primary children. A child's reasoning improves as his experience increases. Lack of experience puts a child at a disadvantage in reasoning, compared with an adult.

Children's concepts are frequently very different from what adults think they are. Although their ideas of food, clothing, and shelter are quite clear, their concepts of animals, insects, and plants are hazy; and their thoughts of far-off times and places, full of errors.⁴³

Credulity is associated with ignorance, temperament, and lack of experience. The less an individual knows the more credulous he tends to be. That is why younger boys are apt to be more superstitious than older boys and to believe to a greater extent, in omens, fortune telling, and the like. Girls appear to be more credulous than boys of the same age.

The revision of the Stanford-Binet scale contains many tests which involve reasoning. At the six-year level it includes a test of distinguishing pictorial likenesses and differences, and the practical problem of finding the shortest path to a given goal. In the scale for the seven-year-old are tests of distinguishing similarities between two things, such as wood and coal, a ship and automobile, and certain opposite analogies.⁴⁴ Judgment and reasoning are further tested by questions concerning the thing to do in certain common problem situations. Children of eight years of age may be

⁴³ Joy M. Lacey, *Social Concepts of Children in the First Three Grades*. New York: Teachers College, Columbia University, 1932

⁴⁴ *Measuring Intelligence, op. cit.*, pp. 98-99.

expected to detect simple absurdities and to solve simple everyday problems of living.

The improvement of reasoning results from firsthand experiences which increase a child's fund of vivid and accurate knowledge, and from encountering everyday difficulties, finding solutions to them, and testing his solutions. Children who have a wealth of concrete experience will learn to organize and state the generalizations which they are able to formulate from time to time. They will build these tentative conclusions into more and more adequate generalizations.

Moral Judgments of the Child. — What is naughty to a grownup is not always naughty to a child. The act may be reprehensible only from the adult standpoint. Accordingly, it is a mistake to make the child feel that he is naughty. He should be shown that the *act* is undesirable, unkind, or simply not permissible. This can be done without instilling in him feelings of guilt, fear, and anxiety.

Piaget⁴⁵ observed in the groups of French children whom he studied a gradual development of moral ideas. Up to the age of seven to eight right and wrong were conceived in terms of adult restraint, justice being subordinate to adult authority; later in terms of practicality and equalitarian justice; and, beginning about the age of eleven, in terms of fair play and considerations of equity. During the primary period this tendency to conform to adult wishes may be due to a high degree of suggestibility which, in the group studied, appeared to reach a peak at about seven years of age. Because of this tendency primary children have often been characterized as docile. During the primary period children who tended at the beginning to think of right and wrong exclusively in terms of adult approval or disapproval should learn to consider the justice and practical results of their actions and the effect of them on other persons.

Without doubt, many concepts presented in Sunday School are too abstract to be understood by children of the ages of

⁴⁵ Jean Piaget, *The Moral Judgment of the Child*. New York. Harcourt, Brace and Company, 1932.

six to nine. They lack concreteness and application to everyday life. A child may, to all appearances, accept the idea of brotherly love but, when confronted with the practical problem of what to do when a child hits him without meaning to, may make the immediate response of hitting him back. Moral judgment does not necessarily parallel moral behavior. As measured by existing tests moral behavior does not definitely improve with age. Children do not grow less deceitful or selfish as they grow older unless their environment has become more conducive to honesty and unselfishness.

Although tests of moral knowledge and of actual behavior have not shown high correlations, it is possible that tests of *conceptual maturity* in the domain of moral-social relationships might show higher correlations with behavior, and indeed provide a basis for seeking organized behavior trends.⁴⁸

Criticism. — Adults too frequently criticize children's reasoning and constructive work in terms of their own preconceived ideas, without attention to the meaning of the criticism for the child. If an adult's criticism of a child's behavior or the product he has fashioned bumps up against a closed system — something the child considers complete and correct — the criticism is almost certain to fall upon dry and barren ground and to bring forth no fruit. Criticism, therefore, should be given in terms of an existing pattern in the child's mind; it should enter into the child's world and enlarge it. It should look upon a child's accomplishment from within the process as he sees it, not from without. Whether or not criticism is assimilated largely depends upon whether it is made an intrinsic part of the process in which the child is interested.

Health Knowledge and Health Practice. — During the primary period it is very important to establish healthful ways of acting, thinking, and feeling. These habits precede health

⁴⁸ Mary Cover Jones and Barbara Stoddard Burks, *Personality Development in Childhood*, p. 57. Monographs of the Society for Research in Child Development, Vol. 1, No. 4, Washington, D. C. Society for Research in Child Development, National Research Council, 1936.

knowledge In fact, a child's functioning health knowledge is the result of generalization from his experience in healthful living. The twenty-four hour day is full of opportunities for doing things in a healthful rather than in an unhealthful way. Personal cleanliness and healthful living in school require washing the hands after going to the toilet and before eating; sitting, standing, and walking with good posture during the entire day; covering the nose and mouth when sneezing and coughing; reporting to the teacher or nurse if one feels ill; holding books and writing material vertically at least twelve inches from the eyes when reading and writing; keeping the fingers, pencils, and all kinds of objects out of the mouth; watching the room thermometer to see that it does not rise above 68° F.; choosing a lunch of milk, bread, vegetables, and fruit, if opportunity for choice is given; allowing a half-hour for lunch so that the food may be well chewed, going outdoors to play at recess rather than sitting inside; and being consistently cheerful and good-natured. At home the child may establish additional good habits of going willingly to bed at the appointed time, taking responsibility for the care of his teeth and personal cleanliness, eating willingly the wholesome food set before him, helping to make mealtime a pleasant time for everyone, and learning to face his difficulties and problems squarely rather than to cry, or get angry, or blame someone else, or withdraw into the more pleasant world of daydreams. Growth along these lines should be made in the primary period.

Habits of healthful living may be reinforced by knowledge even in the primary period. To read in a book about attractive children doing the healthful things he has been doing adds to a child's conviction of their importance. To obtain simple explanations of why he should continue to drink milk and to eat vegetables and fruit give him additional motivation for doing so. In some cases a knowledge of what to do and how to do it is necessary for "getting the act performed."

SOCIAL DEVELOPMENT

The problem of getting along with other children is not a serious one in the primary period if the habits previously mentioned have already been formed. But "new occasions teach new duties." The new school situation requires new habits, and old habits of courtesy at home will not necessarily carry over and function in the new environment. The habits of consideration, co-operation, helpfulness, personal cleanliness, and hygienic living established in the preschool period are modified and further developed in the primary period to meet the needs of the new and wider environment.

Specific Kinds of Social Behavior. — The value of certain kinds of social behavior should receive more consideration. What kind of social response is most desirable? For example, should talkative, reticent, extrovert, or introvert tendencies be encouraged? What is the golden mean in generosity? Should children learn to give more than they take? Is there not some danger in unduly increasing the social fears of children? After five years of age an increase has been observed in fear of ridicule, fear of loss of prestige, and fear of events that might threaten a child's status and future security.

Social behavior in school situations involves different specific responses from social behavior in home situations. It involves being courteous in his everyday school associations, keeping quiet at certain times, taking turns, not laughing or making fun of the mistakes of other children, paying attention when someone else is talking, not getting angry when the good of the group demands an interruption of his activity, and not taking more than his share of time and attention. Co-operation in school means obeying the rules of the school regarding recess, conduct in the halls, study periods, and the like; working together with other children on a group project; taking the lead or doing the particular job assigned to him; being in the right place at the right time; and playing games with other children. Helpfulness in school means keeping his own desk or locker neat, helping to keep the

school building and grounds clean, and performing faithfully the duties of every school office to which he is elected or assigned.

Stages in Social Development.—Piaget⁴⁷ distinguished three stages of social development in the children whom he studied. In the first stage, which he designates as egocentrism, the individual is impervious to social stimulation from without, at the same time that there is a lack of barriers between the child and the outside world. In the second stage the child makes an effort to enter into real social communication. In the third stage there is reciprocity and mutual respect between persons. The age sequence of these stages of social development probably varies with different socio-economic groups and different cultures. The child may be egocentric, or he may not have developed the idea of the ego which has grown up in a particular society. There is already a little evidence that children from more privileged homes pass through the earlier stages more quickly than do children from underprivileged homes. Mental ability, likewise, affects the child's social development.

There are also stages in the child's relationship to his parents. Parents tend to lose prestige as the children grow older. Up to seven years of age many children designate members of their family as the ones they admire most. From seven years to adolescence the percentage of children so responding tends to decrease until at adolescence few children find their heroes in their own family.

Considerable attention has been given to the preferences of children for one or the other parent. In one group of 250 boys and 250 girls ranging in age from five to nine years the majority of both sexes, except in the five-year-old group, expressed a preference for the mother.⁴⁸ Gifts were not highly efficacious in making a parent popular. These children appeared to like best the parent who catered to their

⁴⁷ Jean Piaget, *The Child's Conception of Physical Causality*. New York: Harcourt, Brace and Company, 1930.

⁴⁸ Margarete Simpson, *Parent Preferences of Young Children*. New York: Teachers College, Columbia University, 1935.

material wants, played with them most, and punished them least. Still more important would be a knowledge of the extent to which existing preferences can be modified and of the effect of a particular preference on a child's development.

The relationship between parent and child depends upon the total situation.⁴⁹ Some intellectual, brilliant parents are not appreciated by their children until the latter have reached a certain stage of maturity. The genuine goodness and kindness of other parents are frequently not fully appreciated until after their death or until their children have themselves had experience in parenthood. One eight-year-old girl showed unusual appreciation of motherhood when she was looking at the pictures of famous women printed on the covers of a popular magazine. She asked her mother why one of the women was selected. Her mother replied that the woman in question was famous and a brilliant, gentle woman who wrote beautifully. The little girl thought this over and then said, "Why don't they put you on the cover? You are famous and gentle," and added a minute or two later, "Aren't all mothers famous and gentle?"

Developing Social Behavior — Learning how "to get along with other people" demands practice in working and playing with children of the same age, younger and older children, and adults. This practice is provided in a school in which there is freedom to move about, to consult and assist other children, to solve group problems, to play a variety of active and quiet games — all under the supervision of a teacher who frequently gives her approval to the desirable social behavior she notices and occasionally suggests a better way of acting — such a school furnishes the best environment for learning to live happily with others. Children need help in developing habits of co-operation. They need adult encouragement in friendly and sympathetic actions. The influence of the teacher in the first three grades is unobtrusive, but very great. It has been noted that with certain teachers children are courteous to the teacher and to each other, while with other teachers they are discourteous and

⁴⁹ See articles in *Smith College Studies of Social Work*, VII (1936), 1-46.

quarrelsome. The truth of the old saying, "Pay out a smile and get a smile," is supported by recent scientific observation in schools here and abroad. Sheer association with persons of genuine social sensitivity and skill may contribute a great deal to a child's social development. An interesting illustration of the effect of association in the animal world was described by Murphy and Murphy:

A sparrow reared in a nest of canaries began to abandon his own chirps and to take over the canary's *call note*. In another experiment a sparrow fledgling, living among canaries, first modified his sparrow chirp, then began to give notes in rapid succession, running up and down the scale from three to five notes. His voice, at first hoarse, became soft and musical, approaching that of the canary. When past three months of age, he gave a genuine musical trill. . . .⁵⁰

When placed among sparrows he resumed the sparrow voice. When placed with canaries again, both birds quickly regained the canary song.

In order to understand a child it is not enough to know the general developmental trends during a given age period, nor merely to recognize the measurable differences between individuals in single aspects of the personality. We must seek to study the dynamic interpenetrations of physical, intellectual, and emotional factors which constitute the uniqueness of each individual personality.

QUESTIONS AND PROBLEMS

1. Observe six- to nine-year-old children engaged in unsupervised play at school, in a public park, or play space in the neighborhood. Record the kinds of games and other play activities, the length of time they engage in each, and the ones they appear to enjoy most. Note, likewise, any evidences of sympathetic behavior, or of moral judgment, as for example, in connection with disputes that may arise.

2. Which physical defects are most common among children in the first three grades of your school? What changes in the environment can be made that will prevent these defects in the younger groups of children?

⁵⁰ Gardner Murphy and Lois Barclay Murphy, *Experimental Social Psychology*, p. 128. New York: Harper and Brothers, 1931.

332 AN INTRODUCTION TO CHILD STUDY

3 Name some desirable things children do naturally which the school may help them to do better

4 Describe experiences which prepare children for reading and arithmetic

5 How should achievement in number in the first three grades be judged?

6 If you were free to choose, which style of handwriting would you teach in the primary grades? Why?

7 What social development may be expected during the first three years of school? What progress in reasoning and moral judgment? Give examples

8 Help a boy in the first grade and a girl in the third grade to make good work and play schedules for Saturdays and Sundays

9 Give suggestions for summer vacation activities for boys and girls of primary school age.

CHAPTER XV

HOW PRIMARY CHILDREN LEARN

Children learn and are happy when they are engaging in creative activity appropriate to their ability and particular temperament. Once assured that the work and play are suited to a child's ability and maturity, the parent or teacher may leave him alone except when he is at a point to profit by specific instruction or encouragement. Both parents and teachers should plan with the children periods when they are to do certain tasks of gradually increasing difficulty, and periods of leisure time which will not be encroached upon by the demands of adults, except in an emergency.

The same policy advocated for the preschool period should be continued: to provide suitable work and play materials and companionship, to allow the children to go ahead on their own initiative, so far as possible, not to interfere unnecessarily with them, to treat them with the same respect with which one would treat an adult and to expect them, in turn, to listen courteously and sympathetically to others as cultured people do. School should be a place where children do things that count for something; not a place where they merely follow every whim, or conform to imposed requirements which they had no share in making.

It is encouraging that children placed under such a school program can achieve as much measurable information as do children working under a more formal program in which attention is focused directly upon the kind of achievement measured by standardized tests. In addition, the activity group may be expected to profit by the social and emotional advantages of their program — outcomes which at present cannot be measured.

In this chapter attention will be given to practical suggestions for acquiring the various abilities described on pre-

vious pages. Development of individuals rather than the building up of a body of subject matter should be the primary consideration of instruction. When this primary principle of learning is not followed, it is often more appropriate to speak of methods of destruction rather than methods of instruction.

THE COURSE OF LEARNING

The course of learning is shown by learning curves. These learning curves present graphically individual differences which result from differences in the ability and previous experience of the children, differences in interest, in the method of learning, and in the task. Certain fairly typical curves, however, appear in specific types of learning. In finding the way out of a maze the learning curve usually shows greater gains at the beginning than at the end of the process. In learning somewhat complicated acts of skill, such as ring-tossing, progress is slow with many ups and downs. In solving problems the learning curve is slow and wavering while the individual is exploring the situation; then, when insight into the solution is gained, there is a sudden rise in proficiency and a sudden drop in the amount of time required to solve the problem again. A Gestalt psychologist presented a match trick to several subjects, all of whom fumbled about some time in solving it. As soon as they had discovered for themselves or were shown the organizing principle of the puzzle, they solved it at once. Moreover, when puzzles involving the same principle were later presented, the subjects solved them quickly without difficulty. In learning a foreign language progress is at first slow and then gains momentum through an accumulation of familiar words and general principles of grammatical construction. Obviously, there is no one curve of learning. There are, instead, various conditions under which certain kinds of learning take place most efficiently.

Individual Differences.—Both observation and tests reveal great differences in readiness to read, write, and do arithmetic among children entering the first grade. Not

only do marked differences exist within a given group, but great variability is likewise evident within the individual child. Some children have had experiences that make them proficient in number ability although they have a poor vocabulary, while others can comprehend printed sentences, but lack fundamental concepts of numbers.

Evidence is accumulating to show that there is a psychological moment for learning to read, to write, and to do long division. This psychological moment is different for each child, depending upon his ability, experiences, and purposes.

LEARNING TO SUSTAIN ATTENTION

The habit of sustained attention is acquired through engaging in challenging tasks. If the school day is not divided into arbitrary periods, each child will have the opportunity to build, or read, or print as long as the task holds his attention. If a child begins to show restlessness, listlessness, or other signs of fatigue in an unusually short time, the teacher will re-examine the child's occupation with reference to his ability and maturity and if it seems to be suitable, point out new and intriguing aspects. If a child's interest continues to be keen, the teacher will, if possible, allow him to work a little longer rather than to direct him abruptly to something else just because the clock has struck. In this way children become accustomed to increasingly longer periods of sustained activity. Attention cannot be demanded. It is a by-product of interest and maturity.

ACQUIRING GRACE AND SKILL IN MOVEMENT

Anyone engaged for the first time in manual or physical activity requiring complicated co-ordination is clumsy. He makes many unnecessary and awkward movements. "His fingers are all thumbs." With practice the whole pattern of learning is simplified. A teacher or parent may help a child to acquire a given skill by demonstrating a correct starting position and by pointing out successful movements, such as:

"Look, this is a good way to hold the hammer." "That's the way to hit the nail on the head." The school and home may help by providing space and freedom for activity, material to use, and other children with whom to work and play.

Materials and Equipment. — The home environment has already been discussed. The school environment at its best should resemble an ideal home environment. There should be enough floor space to allow freedom of movement. Interference with others' activity is sure to occur in a limited space. The desks or chairs should be movable so that they may be arranged in small groups and put to one side in order to give space for dramatization or games. A work bench in one corner equipped with small-sized standard tools and boards and nails gives opportunity for acquiring skill in woodwork. A cupboard, or at least a folder for each child's work is essential. "A place for everything" helps to build up habits of neatness and orderliness. A covered jar for clay, and individual boards on which to do modeling, covered jars of paint, crayons, paper, and printing sets are good constructive material. A sand table lined with zinc may be filled with water at times and used for water play. In view of the importance of the physical environment in evoking desirable responses on the part of the children, a guide to materials and equipment for elementary schools¹ is an important reference book for teachers.

Additions to the room or playground which furnish beauty and opportunities for activity at odd moments should be supplied. Ferns and other growing plants make the room more healthful and beautiful. One teacher kept her two window sills banked with potted plants which blossomed in their season. In the fall chrysanthemums held sway. In the early spring, tulip buds opened and bloomed until Easter vacation. Attractive books on different subjects and of different degrees of difficulty on tables invite browsing. An aquarium is a source of pleasure to primary children. The

¹ Rose B. Knox, *School Activities and Equipments* Boston: Houghton Mifflin Company, 1927.

pictures, hung low on the walls, should be few in number and should be changed from time to time. Bulletin boards are indispensable. A swing, ladders, and ropes provide the apparatus needed for climbing, swinging, and jumping. Attractive school ground with trees, flowers, shady places, a brook, and a pond are possible in the country. A playground with strong simple apparatus, large blocks, bricks, wheelbarrows, shovels, a big sand pile, individual garden plots, a yard for pets, and a birdbath can be cared for by the children. Where the school equipment is inadequate, the home should make a special effort to supplement it. Where the home environment is meager, the school should try to supply the deficiencies.²

Value of Physical Activity. — Improvement in motor control, skill, and poise is only one of the values of physical activity. Social, moral, and personal habits — learning to play with others, to take turns, to play fair, to plan a piece of work, to face difficulties that arise and to stick to a job until it is finished — these and similar habits are learned through play and constructive activities. The child's play is an experimental activity which contributes to his knowledge of the external world and which helps him to make the necessary adaptation. Play has mental hygiene value in that it is an area of school life in which all children may experience success and live for a while in a congenial world and be the kind of self they may have dreamed about. The teacher is needed to contribute suggestions from her wider experience; to help the children discover a better way to act when a conflict arises among diverse personal desires; to show a way out of insurmountable difficulties, to increase the children's knowledge of things and people, and to see that desirable ways of acting bring satisfaction and undesirable responses result in annoyance.

² Dorothy Canfield gives a charming practical description of the way parents in her community remodeled the old school building. Dorothy Canfield, "What We Did with Our Old Schoolhouse," *The Country Gentleman*, XCII (August, 1927), 21.

LEARNING TO WRITE³

Writing is not as natural an activity as walking. It must be learned. Moreover, it is not entirely a motor ability but involves the higher thought processes as well as muscular co-ordination. The child has to perceive the copy clearly; he must have sufficient motor co-ordination to make the strokes necessary in forming the letters; he must be able critically to compare his attempt with the copy, and note and correct errors. Finally, he must remember the letter forms when he has no copy at hand. His writing must, first of all, be legible, and, secondly, as rapid as the exigencies of his life demand.

Readiness for Writing. — In teaching primary children to write the teacher should recognize the fact that the children have had widely varying amounts of pre-writing experience. Some have scribbled to their hearts' content and through keen self-criticism and a little help from their parents have taught themselves to write their names with ease, accuracy, and speed. Others have been told how to write their names, but have been given little practice in doing so. Still others may have already acquired a dislike or sense of failure in regard to writing because of unintelligent criticism of their early efforts. Accordingly, the teacher should first ascertain a child's present stage of interest and proficiency in writing and begin instruction at that point.

What Can the Teacher Do to Help a Child Learn to Write? — First of all, the teacher should wait until the child is ready to write; that is, until he has sufficient motor co-ordination and intelligence to succeed. Rapid progress in writing is usually not made before a child has reached a mental age of about seven years. This general estimate, of course, is modified by conditions, including methods of instruction.

When the child has reached a stage of maturity conducive to learning to write, the next step for the teacher to take is to watch for and encourage any evidences of the child's

³ Gertrude Hildreth, *Learning the Three R's*, pp. 216-263; 514-536. Minneapolis, Minn.: Educational Publishers, Inc., 1936.

desire to write and to take advantage of opportunities for writing as they occur. These natural situations provide motives for acquiring writing ability. Certain situations, such as the following, provide opportunities to introduce writing:

(1) A first-grade child has difficulty in identifying some of his belongings. If he knew how to write his name, he could label his things, and would always know which are his. This is the psychological moment for teaching him to write his name.

(2) Some third-grade children want to make valentines for their mothers. The skilful teacher uses this desire as an incentive for acquiring skill in writing. The children practice writing the little verse composed by one of them and, when they have learned to write it well, copy it on their valentines.

(3) Children in a New York school wish to answer a letter which children in a Southern school have written to them.

(4) A third-grade class invites a second-grade group to their play, and the second-grade children are eager to reply to this invitation. In such situations the strong incentive to learn to write results in easier and quicker learning.

When children are eager to learn to write for some special purpose, the teacher should provide opportunity for practicing the specific passages which the child wants to communicate. She will let the children use the blackboard space freely. She will provide crayons or pencils large enough to prevent the strain attendant on muscular adjustment to small letters. She will reserve pen and ink for a later stage of development. In one third grade pen and ink were introduced as a special privilege to the children who had attained a certain standard in writing with pencil. Whatever the instruments used, the best plan is to let the child practice real writing from the beginning.

Practice alone will not insure skill in writing. To practice should be added instruction. The teacher can help the child by showing him a natural, comfortable way of sitting and holding the pencil. For right-handed pupils the most natural position is with both forearms resting on the table and the paper placed directly in front at a slant of forty-five

to sixty degrees. As he works, the teacher can help him identify the movements that are bringing success. Experiments have shown that guiding the child's hand through the movements is of little value. The teacher may help the children make their movements more efficient by using the results of a motion study of the processes involved in such motor activities as writing, holding a book, skipping to music, and erasing a blackboard.

Verbal instruction is usually less effective than a demonstration and, in writing especially, a copy that is neither too easy nor too difficult should be provided. This model may be a sentence, which says something the child wishes to communicate, written by the teacher while the child is watching. After he has seen the teacher write it, he should try to copy it himself.

The improvement of writing results from critical evaluation of systematic practice. Handwriting scales⁴ are useful in helping the child to evaluate his writing. He may compare his own attempts with the model and so see more clearly his progress. Such specific knowledge of results is decidedly an aid in learning. The child falling short of attaining the desired result will be restless and dissatisfied with his unsuccessful movements and will be stimulated by success to put forth still more effective effort.

Formal drill in handwriting with emphasis on a uniform rhythm and movement is being replaced by specific individualized instruction. If the valentine for his mother is not written as well as the child desires, he should be encouraged to practice certain words and even letters until they conform more closely to his ideal.

What Can the Parent Do to Help a Child Learn to Write? — The parent, as well as the teacher, can re-enforce

⁴ Leonard P. Ayres, Gettysburg edition. Department of Education, Russell Sage Foundation, 1917. (Widely used, basis for other scales also.) Grades 2-8. Based on legibility. Frank N. Freeman and the Zaner-Bloser Staff, *Freeman Handwriting Measuring Scale*. Columbus, Ohio: Zaner-Bloser Co., 1928. Grades 2-8. Edward L. Thorndike, *Scale for Measuring Handwriting*. New York: Bureau of Publications, Teachers College, Columbia University, 1910. Grades 5-8 (Starch has worked out norms). Based on beauty and ease of movement.

30

*Four score and seven
years ago our fathers brought
forth upon this continent
a new nation, conceived*

50

*Four scores and seven
years ago our fathers
brought forth upon this
continent a new nation,*

70

*Four score and seven
years ago our fa there
brought forth a new na-
tion, conceived in liberty,*

FIG 4 THREE QUALITIES FROM THE AYRES HANDWRITING SCALE

the child's desire to learn by encouraging him in his spontaneous attempts to communicate in writing. These home opportunities have a reality and a value to the child which even the best-planned school project frequently lacks. For example "Mother is writing to daddy Jimmie wants to send a message, too." "Mother is very busy The laundry man will be here any minute Will Mary please copy the laundry list for her?" Or, "Aunt Susan enjoyed the nut bread mother served for dinner. She wants the recipe for it. Will Mary copy it for Aunt Susan?" Daily, such opportunities for writing arise in the home

Encouraging the child to write letters to his friends and relatives gives excellent practice in composition as well as in writing. Attractive writing paper and a desk and chair of the right size placed near the window, so that the child will be able to assume the correct writing position without shadows on his paper, increase interest and ease in writing.

Manuscript Writing. — Manuscript writing is popular in the primary grades for a number of reasons. It is like the printing of capital letters which many children have already begun to do. Being somewhat like drawing and composed of relatively simple strokes it is easier for beginners and better suited to their level of maturity. Its close resemblance to reading and spelling material suggests a theoretical advantage which has not yet been experimentally demonstrated. Manuscript writing appears to improve the spelling of some children, to be detrimental to others, and to have a neutral effect on still others. One experiment⁵ showed that with practice one group of children could write it almost as rapidly as cursive script.

Speed and Form. — Speed, however, should not be emphasized to the detriment of legibility and ease of writing. The speed standards of twenty to forty-five letters a minute in the first three grades, which are based upon average accom-

⁵ Edwin H. Reeder, "An Experiment with Manuscript Writing in the Horace Mann School," *Teachers College Record*, XXVIII (November, 1926), 255-260.



Underwood & Underwood

CHILDREN MAILING LETTERS WHICH THEY HAVE WRITTEN

Writing real letters to children in other parts of the country, to distant relatives, or to Santa Claus furnishes excellent incentives for effective writing and composition. .

plishment of large numbers of children chosen at random, do not necessarily represent the ideal rate of writing for all primary grade children. The child's attention should be directed toward more legible and more perfectly controlled rather than more rapid handwriting.

The alphabet in both capitals and lower case should be in view of the beginner so that he may make the letters correctly and not practice incorrect forms⁶ Samples of his writing should be dated and filed away from time to time, then later compared in order to have objective evidence of improvement. To have the skill to write something in which he is intensely interested, to see the progress he is making, and to receive praise for it are strong incentives for the improvement of writing ability.

Typewriters have appeared in some primary grades and are welcomed as a stimulus to children's composition before they are ready for handwriting. The typed material is easily read and typing encourages the child to move his eyes from left to right across the page. According to one investigator,⁷ using the typewriter has a favorable effect on children's creative writing. If it is not allowed to supplant handwriting, it tends to influence favorably both quality and speed in handwriting.

LEARNING TO DRAW

The Teacher's Part. — As in writing, the teacher's part is to encourage the child's interest in drawing, provide the needed materials, show him how to use the materials, and call attention to the good points in his method and results. Children do both good and bad work in drawing. A teacher is needed to point out the differences. She may hold up the children's drawings one by one and say, "James has chosen lovely colors, has he not?" or "I don't think this has enough

⁶ Edith U. Conard, *Trends in Manuscript Writing*. New York: Teachers College, Columbia University, 1936.

⁷ Edith U. Conard, "A Study of the Influence of Manuscript Writing and of Typewriting on Children's Development." *The Journal of Educational Research*, XXIX (December, 1935), 254-265

in it — so much space here,” or “I like this because Jack has said so much in a few simple lines,” or “By repeating the same flower Betty has made a lovely picture,” or “See how the lines in this picture run out from the big bird in the center,” or “This picture has an interesting rhythm of light and dark forms” In this way, by approving and pointing out specific art qualities which the children show spontaneously, the teacher can help them to grow in discrimination without discouraging their inadequate creative efforts by direct criticism This incidental positive kind of criticism leaves the child eager to do original work and to try out the suggestions

Primary Art Materials — Some materials needed for art work in the primary grades are several wooden easels about forty-three inches high for the kindergarten, forty-seven inches for the first grade, and fifty inches for the second grade Different sizes in each grade are desirable to provide for differences in the children's height Large sheets of wrapping paper, unprinted newspaper 18 by 24 inches, or bogus paper are thumbtacked on the easels, and large paint brushes, such as the Japanese water-color brush, and tempera water colors are used. If show-card paint (tempera) is too expensive, wall paint in powdered form may be purchased, mixed with water, and kept in little jars with covers. These paints and brushes are excellent for painting scenery for plays Children like to do work of this kind. Easels provided in the classroom are almost always in use.

Recently, considerable interest has been shown in “finger painting.”⁸ This process is a sort of glorified mud-pie activity. The paints are of the consistency of mud and are applied with the fingers, palms, or forearm. They do not stain the children's hands or clothing. It is said that this kind of painting relieves tensions and constitutes effective therapy for certain behavior problems.

The materials used most constantly by children at their

⁸ Ruth F. Shaw, *Finger Painting: a Perfect Medium for Self-Expression*. Boston: Little, Brown, and Company, 1934.

desks or tables are colored crayons and sheets of drawing paper. With these materials the first-grade child will picture for others his ideas, illustrate stories, and combine familiar forms into art patterns. With clay he will mould articles interesting to himself or valuable as possible gifts to his mother or other relatives.

LEARNING TO READ⁹

Reading Readiness.—Neither the policy of delaying the teaching of reading beyond the age at which the majority of children learn to read nor the teaching of reading only to children who express an interest in it has proved to be entirely satisfactory. The children in schools in which reading has not been systematically taught are embarrassed by the superior ability which their friends in other schools show. The children who do not choose to learn to read by the end of the third grade begin to feel that they are peculiar or “dumb” when they compare themselves with their classmates. For these reasons certain progressive schools which previously delayed systematic instruction in reading until the child manifested a definite desire to learn to read are changing their policy and are now making every effort to teach the second grade children to read, write, and use numbers in a social setting that demands these skills. Such a demand is made by the activities of the progressive school. The storekeepers, the editors and printers of class papers, the secretaries of clubs and class meetings need a knowledge of reading, writing, and arithmetic.

The child who has a rich, varied, and grammatically correct oral language ability and an interest in getting ideas from printed material is usually ready for reading. The

⁹ Arthur I. Gates, *The Improvement of Reading: a Program of Diagnostic and Remedial Methods* (revised edition). New York: The Macmillan Company, 1935.

Arthur I. Gates and Guy L. Bond, “Reading Readiness,” *Teachers College Record*, XXXVII (May, 1936), 679-685.

Gertrude Hildreth, *Learning the Three R's*, pp. 72-154, 363-444. Minneapolis, Minn.: Educational Publishers, 1936.

relationship of oral language to reading may be represented schematically.

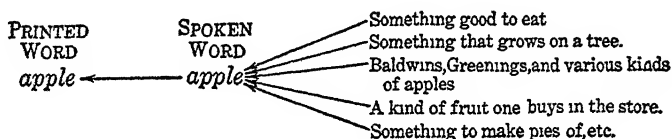


FIG. 5

If someone shows a child the unfamiliar printed word *apple* and pronounces it, the child's previous experiences with apples become attached to the printed symbol. Thus, the printed word acquires meaning for the child. Many first-hand experiences with things and people and practice in telling about these experiences make a good background for beginning reading.

Experiences That Emphasize Reading as a Thought-getting Process. — One of the first steps in acquiring reading ability is to learn that printed words have meaning and significance. A child is sure to have difficulty later on if he learns merely to pronounce printed words correctly, without understanding or caring to understand their meanings. The idea that black and white marks on paper have meaning for him must be established very early. Getting the meaning of the passage should be emphasized from the beginning. Comprehension cannot be tested by merely hearing a child pronounce the words. Comprehension must be tested by requiring a child to point out objects in pictures, follow printed directions, answer correctly questions about the passage he has read, or, in other natural ways, demonstrate his ability to use the information he has gained from his reading.

It is also important to arouse a desire to read. If the child hears stories, has illustrated books to look at, sees other children enjoying reading and gaining advantages by being able to read, he will probably be eager and ready to learn. Some particular word or group of words, such as the printing on the hot and cold water faucets, the signs on the street and

in the parks — “Go,” “Stop,” “Please keep off the grass” — parts of a story that has been told, and simple directions and notices printed on the blackboard or the bulletin board, furnish excellent reading material to begin with, because such reading is useful to the child.

One first-grade teacher put the following notice on the bulletin board: “Mary’s mother has some pictures of the children. If you want one sign your name here.” Those children who read the notice and signed their names were given the pictures. Another first grade planned an excursion to a near-by park to give the squirrels a Thanksgiving party. Before going, the children read the following directions regarding safety:

Stop Look Listen
Cross the street at the crossings.
Walk across the street
Do not run across the street

Books Easily Available. — Attractive books should be put in a conspicuous place and the children invited to sit at the table and look at them or take them to their own seats.¹⁰ If they find something interesting in the books, they may tell the group about it. The children should be encouraged to bring some of their books from home, to tell the other children about them, and leave them on the table a few days for others to look at and read.

Reading Material Dealing with Familiar Experiences. — Beginning reading material should deal with experiences familiar to the child so that he will have many associations with the words as soon as he identifies the printed symbol with the spoken word. Beginning reading material should be natural, logical, and conversational, and so similar to the child’s own speech that he can easily read ahead by anticipating meanings. Accounts of visits that pupils have made and activities in which they have engaged make excel-

¹⁰ Lewis M. Terman and Margaret Lima, *Children’s Reading*, Chapter 8. New York: D. Appleton and Company, 1926.

lent reading material¹¹ The following account¹² of the farm and city constructed by a second grade of the Lincoln School was composed by the class and teacher together and used as informal reading material.

We made a farm and a city and took pictures of it when it was all done. We wanted to show how the farmer helps the city and how the city helps the farmer.

In the city we have a cotton factory and a woolen factory They make the thread and the cloth We have a post office, a garage, a fire department, a cold storage building, a market, a Lincoln school, docks for the ferry boats, a bridge across the East River and a tunnel under the Hudson, a Pennsylvania Railroad station, and chalk marks for tracks, sidewalks, and streets

In our farm we have pigs In the barn is hay and we have some horses and cows. We made the animals of clay. Miss Miller showed us how to make some of the animals and we made the others by ourselves

We built houses for the farmers, a pig pen, and fences for the fields We put green paper for grass and some of the children painted pictures for the meadows

We painted some pictures blue for the waters and we have pictures of ships sailing down the rivers

Beginning reading material should be interesting so that the child, like *Oliver Twist*, will want some more. The material should be relatively simple so that the child will read a great deal

Procedure in a Progressive School.—At the Little Red School House in New York City reading is introduced in the seven-year-old group in a period of about six weeks, during which time the reading material comes directly from the children's work and play interests. In being connected with their vital experiences, reading acquires meaning and

¹¹ A book of stories and verse dictated from time to time to a teacher by the children in the Lincoln School of Teachers College after they had gone on visits to a few fascinating places is a new and interesting type of supplementary reading material—material written by the children for the children: Florence E. Matthews and Rebecca J. Coffin, *City Stories* New York: Macmillan Company, 1928 See also Laura Zirbes, *My Farm Book*. New York: Lincoln School of Teachers College

¹² Charles W. Finley and James S. Tippet, *Field Work*, pp. 23, 24. New York: Lincoln School of Teachers College, 1925. Quoted by permission of the publisher.

purpose from the beginning. During the year the children supplement published books with their own reading material consisting of charts, booklets, and a class newspaper describing their activities. For the newspaper the children frequently bring items of interest found in the daily papers. After about two months primers are introduced. Library reading follows as soon as the children have gained sufficient reading skill and independence. In succeeding grades some essential group task, such as running the school post office and store, printing by hand reading material for a younger group, and doing the school printing supplies genuine motivation for acquiring proficiency in all the tool subjects.

Methods of Teaching Reading — About two centuries ago the law of satisfaction was applied to the learning of reading by having the alphabet stamped out in seductive gingerbread:

And that the child may learn the better,
As he can name, he eats the letter

Block and other letter games were devised with the idea that the child might play himself into reading. The Oriental method of learning to read consisted of putting in the little child's hands a book which he repeated in concert with his fellow pupils until he knew it by heart.

What is the best method of teaching reading? There is no one best method. The method used must be appropriate for the child who is taught. It is "willing effort" that makes a child who is ready to read learn fast. A combination of approved methods should give the best results. One group of children was taught by first telling the story in such a way as to arouse interest in it. Next the new words were written on the board and the children given a phonetic drill on each. After all the new words had been studied, the children read the selection orally and were drilled in locating certain lines. A similar group of children were taught by allowing them to attempt to read very interesting material, to get meaning and enjoyment from it. Lines, phrases, and finally words were studied individually as the need for

special study arose. The first group was able to follow the printed lines better, and to pronounce all the words, but was not much interested in what the story was about. The second group was keenly concerned with the content of the reading material but did not recognize words or follow the lines as well as the first group.

A number of other experiments have indicated the superiority of the look-and-say and the sentence or thought methods over an exclusive use of the phonetic method.¹³ It is possible by too much concentration on phonics or, in fact, formal drill of any kind, to divert the child's attention from the meaning of the paragraph and to rob reading of its interest and pleasure. Since reading ability ultimately depends upon interest and pleasure which insure independent outside reading, any method which makes the reading process mechanical and fatiguing, and identifies it with school alone, is undesirable.

A quiet place to read at home or at school, visits to farms or harbors or other fascinating places which stimulate children to record and then read about these experiences, a table or shelf of interesting easy books and children's magazines through which to browse in leisure time, a chart with each child's name and the books that he has read during the term, occasional reading tests, oral reading in an audience situation, bulletin boards and posters, and a graphic record kept by each child to show the progress he is making in rate and comprehension — all these devices aid in developing reading ability in the first three grades. Specially prepared reading materials in which comprehension is continually checked are useful in some school situations.¹⁴

Oral reading now takes its place as one of the social activities of the school instead of as mere drill in reading. Children read orally to give pleasure and entertainment to

¹³ National Society for the Study of Education, *The Teaching of Reading: a Second Report*. Thirty-Sixth Yearbook, Part I. Bloomington, Illinois Public School Publishing Company, 1937.

¹⁴ Arthur I. Gates, *et al*, *Work-Play Workbook Series*. New York: The Macmillan Company, 1930-1933.

individuals or group. Oral reading demands listeners to whom the material is new and entertaining

School Time Spent in Reading. — Reading is now seldom confined to certain periods a day. It is integrated with the entire school program. Reading is made an integral part of the activities which constitute school life — communicating, constructing, creating, and exploring. Ability to read is a natural outcome of the systematic series of endeavors which constitute the curriculum of the modern school

Causes of Lack of Interest. — There are fundamental causes of lack of interest in reading: use of overly difficult material and failure to see improvement. The degree of difficulty of reading material depends upon the child's level of intellectual maturity, his pre-reading experiences, and the teacher's skill in helping children to see the essential structure of difficult words. For example, the two tall letters in *ball*, the double o in *book*, the tail on the first letter of *yet* help the beginner to identify them. A child gets a sense of progress when he sees that he is advancing toward a definite goal. Frequently, a graphic picture of the goal and the progress made toward it gives the child a pleasant feeling of achievement. One of the chief problems in the teaching of reading is to provide sufficient interesting, graduated reading material beginning at the child's present level of ability.¹⁵

BOOKS FOR KINDERGARTEN AND PRIMARY GRADES

(The stories for the youngest children are placed in the first list)

ANDERSON, ROBERT G. *Seven O'Clock Stories.* New York: G. P. Putnam's Sons, 1920. \$3.00.

BANNERMAN, HELEN. *The Story of Little Black Sambo.* New York: Frederick A Stokes, 1900. \$75.

BROOKE, LEONARD LESLIE. *Johnny Crow's Party.* New York: Frederick Warne and Co., 1930. \$1.50.

¹⁵ Marjorie Hardy, "Right Attitude toward Books and Taste in Reading in the Primary School," *Elementary School Journal*, XXVII (June, 1927), 745-750.

- DALGLIESH, ALICE *A Happy School Year*. Chicago. Rand-McNally and Co., 1924 \$ 80
- FIELD, RACHEL *Little Dog Toby* New York. The Macmillan Company, 1928 \$1 00
- FRANCE, ANATOLE *Girls and Boys* New York Duffield, 1931. \$2 50
 — *Our Children* New York. Duffield, 1931 \$2 50
- GAG, WANDA *Millions of Cats* New York: Coward-McCann, 1928 \$1 00
- HILL, HELEN, and MAXWELL, V *Charlie and His Puppy Bingo*. New York The Macmillan Company, 1924 \$1 25
- HUTCHISON, VERONICA *Candlelight Stories*. New York: Minton, Balch and Co., 1928 \$2 50
 — *Chimney Corner Stories*. New York: Minton, Balch and Co., 1925 \$2.50
 — *Fireside Stories* New York: Minton, Balch and Co., 1927 \$2 50
- KNOWLTON, P. A. *First Lessons in Geography* New York The Macmillan Company, 1929 \$ 96
- LARUE, MABEL G *The F-U-N Book*. New York The Macmillan Company, 1929 \$ 68
- LEFÈVRE, FÉLICITÉ. *The Cock, The Mouse, and the Little Red Hen*. Philadelphia Macrae-Smith, 1931. \$1 00.
- LIDDELL, MARY. *Little Machinery* Garden City, New York. Doubleday, Doran and Co., Inc., 1916 \$2 00.
- LINDSAY, MAUD *A Story Garden for Little Children* Boston Lothrop, Lee and Shepard Co., 1913 \$1 00
 — *More Mother Stories* Springfield, Mass: Milton Bradley Co., 1905. \$1 00
- LOFTING, HUGH *The Story of Mrs Tubbs*. New York: Frederick A Stokes, 1923 \$1 25
- ORTON, HELEN F *Bobby of Cloverfield Farm*. New York: Frederick A Stokes, 1922. \$1 00
- PERKINS, LUCY FITCH. *The Dutch Twins*. Boston: Houghton Mifflin Co., 1911 \$1 00
 — *The Eskimo Twins*. Boston: Houghton Mifflin Co., 1914 \$1 00
 And others of this series.
- RAE, JOHN *Grasshopper Green and the Meadow Mice*. Chicago: P. E. Volland and Co., 1928. \$ 65.
- WIGGIN, KATE DOUGLAS, and SMITH, N. A *Tales of Laughter* (new edition). Garden City, New York: Doubleday, Doran and Co., Inc., 1926. \$3.00.

- BACON, PEGGY *The Lion-Hearted Kitten and Other Stories.* New York The Macmillan Company, 1921 \$1 75.
- BIANCO, MARGERY W *The Little Wooden Doll.* New York. The Macmillan Company, 1929. \$1 00
- *The Velveteen Rabbit.* New York Doubleday, Doran and Co., 1922 \$1 25
- BROWN, EDNA A *The Chinese Kitten* Boston Lothrop, Lee and Shepard Co, 1922 \$1 50
- COLOMA, PADRE LUIS DE *Perez the Mouse* New York: Dodd, Mead and Co, 1918 \$ 75
- COWLES, JULIA DARROW *The Queen Little Tailor* Chicago: A. Flanagan Co, 1917 \$ 50
- LOFTING, HUGH *The Story of Dr Dolittle* New York: Frederick A Stokes, 1920. \$2 25
- MEIGS, CORNELIA *The Wonderful Locomotive.* New York: The Macmillan Company, 1928 \$2 00
- SMITH, MARY P. *Jolly Good Times* Boston. Little, Brown and Co., 1875 \$2 00
- STRYKER, MABEL F *Little Dog Ready* New York: Henry Holt and Co, 1923. \$1 50.
- Susanna's Auction* From the French, illustrated by L. M. Boutet de Monvel New York. The Macmillan Company, 1923 \$1 00
- WELLS, RHEA. *Beppo the Donkey* New York Doubleday, Doran and Co, 1930 \$2.00
- *Peppi the Duck.* New York. Doubleday, Doran and Co, 1927. \$2 00
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- ANDREWS, MARY R S *The Enchanted Forest.* New York. E. P. Dutton and Co, 1909 \$1 50
- BAKER, EMILIE KIP *Out of the Northland* Stories from the Northern Myths New York The Macmillan Company, 1921 \$ 48
- BESTON, HENRY *Firelight Fairy Book* Boston: Atlantic Monthly Press, 1919 \$2 50.
- BROWN, ABBIE FARWELL *In the Days of Giants.* New York: Houghton Mifflin and Co., 1930. \$1.50
- CARROLL, LEWIS *Alice's Adventures In Wonderland.* New York: The Macmillan Company, 1886. \$1 75
- COATSWORTH, ELIZABETH. *The Cat and the Captain.* (The Little Library) New York. The Macmillan Company, 1930. \$1.00.
- COLUM, PADRAIC. *The Girl Who Sat by the Ashes* New York: The Macmillan Company, 1919. \$1 75.

- FIELD, RACHEL L. *Pocket-Handkerchief Park* New York Doubleday, Doran and Co., 1929 \$ 75
- *Hitty Her First Hundred Years* New York The Macmillan Company, 1930 \$2 50
- HASKELL, H. N. *Katrinka*. New York E. P. Dutton and Co., 1915 \$1 50
- KIPLING, RUDYARD. *Just So Stories* Garden City, New York Doubleday, Doran and Co., Inc., 1902 \$2 00.
- LAGERLOF, SELMA *The Wonderful Adventures of Nils*. Garden City, New York Doubleday, Doran and Co., Inc., 1907 \$2 00.
- LORENZINI, C. (COLLODI, CARLO) *Pinocchio*. New York: Ginn and Co., 1904 \$ 50
- MACDONALD, GEORGE. *At the Back of the North Wind*. New York: The Macmillan Company, 1909. \$1 75
- MORLEY, CHRISTOPHER *I Know a Secret* Garden City, New York: Doubleday, Doran and Co., 1927. \$2 00
- MORLEY, MARGARET W. *Donkey John of the Toy Valley* Chicago: A. C. McClurg and Co., 1909 \$1 25
- POTTER, MIRIAM CLARK *Sally Gabble and the Fairies*. New York: The Macmillan Company, 1929 \$1 00
- PLYE, HOWARD *The Wonder Clock*. New York. Harper and Bros., 1887 \$2 00
- SMALLEY, JANET *Rice to Rice Pudding*. New York. William Morrow and Co., 1928 \$1 75.
- SPYRI, JOHANNA *Heidi* New York: Thomas Y. Crowell Co., 1902. \$1.50.
- STOCKTON, FRANK R. *Fanciful Tales* New York. Charles Scribner's Sons, 1895. \$ 72.
- WILKINS, MARY E. *The Pot of Gold* Boston: Lothrop, Lee and Shepard Co., 1893 \$1 50
- YOUNG, ELLA. *The Unicorn with Silver Shoes* New York Longmans Green and Co., 1932. \$2 00.

There are many lists of books for the kindergarten, first and second grades. Some are as follows:

- American Library Association *The Right Book for the Right Child*. New York: John Day Company, 1933
- Child Study Association Lists. New York City: Child Study Association of America.
- DALGLEISH, ALICE *First Experiences with Literature*. New York: Charles Scribner's Sons, 1932. Pp. 162.

- FIELD, W T *A Guide to Literature for Children* Boston: Ginn and Company, 1928 Pp viii + 287.
- FREEMAN, GRAYDON, and FREEMAN, RUTH S *The Child and His Picture Book* Chicago. Northwestern University Press, 1933 Pp 102
- MAHONY, BERTHA E, and WHITNEY, ELEANOR (Compilers). *Five Years of Children's Books* A Supplement to *Realms of Gold* Garden City, N Y Doubleday, Doran and Co, Inc, 1936 Pp. xi + 599.
- MOORE, ANNIE E *Literature Old and New for Children* Boston: Houghton Mifflin Co, 1934 Pp x + 446.
- TERMAN, L M, and LIMA, M *Children's Reading* (second edition). New York: D Appleton and Co., 1931 Pp. xv + 422.

IMPROVING SPEECH

The child in the primary grades has not yet lost his interest in learning new words and in enjoying the sound of rhymes and jingles. He frequently thinks aloud until this tendency is suppressed to meet the requirements of the traditional classroom situation.

Natural Opportunities for Speaking — One way of aiding the development of a child's speech is by giving him as much opportunity as possible to use language for his practical and immediate purposes. Brandenburg's three-year-old child uttered 11,623 words and 1,487 sentences during one day.¹⁶ Other individual children were reported to have used 4,000 to 15,000 words during the day. It would be interesting to compare these numbers with the number of words that first grade children speak during the school day. The teacher's problem is to modify the school environment so that this natural tendency to talk can be utilized in improving the speech of the primary child.

Interesting Experiences about Which to Talk — The teacher can also aid children's speech development by furnishing interesting experiences to relate. Visits may be made to a large city market, a cold storage building, a farm, a cotton factory, a pottery, a cracker or bread factory, a milk-bottling station, the post office, the woods, the seashore, the

¹⁶ George C. Brandenburg, "The Language of a Three-Year-Old Child," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXII (March, 1915), 94.

docks, museum, and other places of interest in the locality. Visits should be planned with a definite purpose in mind and should be discussed before and after the trip. Children's vacations may furnish interesting events to relate. Every day something of note happens if one is on the lookout for it. One second-grade teacher took the time every morning to ask "Who has an interesting experience to tell us today?" Children in the primary grades should have as much opportunity to talk as possible. No artificial language exercises or drills are satisfactory substitutes for natural social intercourse between child and child and between child and adult.

Special Devices. — Dramatization in which the children compose the lines as they act is a stimulus to language development. Both hearing and retelling stories help to increase the vocabulary and facility in speech.

The correct names for things should be taught from the beginning. Children learn these as easily as they do the foolish sentimental names for which the right terms must be taught later.

The teacher and parent should speak clearly and a little slowly, but should not "talk down" to the child. One teacher made it a practice to use frequently in her ordinary conversation each week one word with which the children were unfamiliar. She soon found some of the children using that word.

An Audience Situation. — Forceful, effective speech is encouraged in an audience situation. To have other children listening is an incentive to tell an experience in an interesting way. A child can readily see the class lose interest when he fails to make his ideas plain. To talk in order to cause other people to like something, do something, or learn something is the strongest motive for effective speaking. The child usually does not talk to "express himself" but to produce some effect on someone else. In a one-room rural school permitting the more advanced pupils to teach the younger ones occasionally not only helps the teacher, but also gives excellent speech training to these pupil teachers.

Summary. — The parents' or the teacher's part in the



Underwood & Underwood

A REAL AUDIENCE SITUATION

In an audience situation, a child is stimulated to speak in an interesting and forceful way. Everyday conversation also furnishes opportunity for the kind of language development which life demands.

primary grades in developing the children's language ability may be summed up as follows:

1. To increase the number of words in the child's vocabulary and to enrich the meanings of the words already known.
 - a. Provide new experiences and talk about them afterwards. A visit to a flower store, a toy store, the zoo, or a cotton mill introduces many new ideas and many new words.
 - b. Provide pictures and talk about them informally.
 - c. Introduce a new word each week in your own speech, using it frequently and incidentally in talking with the pupils.
 - d. Use vivid and correct language in talking to the child. Do not "talk down" to the children, do not limit yourself to words with which they are very familiar, or to a continuous use of only simple sentence structure.
 - e. Tell stories, repeating favorites often.
 - f. Encourage the children's own reading, as reading exerts an increasing influence on their vocabulary.
 - g. Enunciate and speak slowly and directly to the child.
2. To increase the child's ability to speak in an interesting, direct, and forceful way.
 - a. Provide opportunities for each child to tell to a group something that the group is eager to hear about.
 - b. Provide opportunities for one child to make explanations to another child.
3. To correct language errors in cases in which these unfortunately have crept into the child's speech due to poor environment or poor teaching.
 - a. In certain of the audience situations, tell the child to make believe he is the teacher and to speak as correctly as possible.
 - b. Find out which grammatical errors occur most frequently. Provide frequent situations in which the correct form of these errors will be called for. Explain to the child specifically, when possible, why one is right and the other wrong. "He aint" means "he am not." We say "he is," not "he am." "He isn't" therefore, would be correct.

- c. Have the children help each other correct some of the frequent mistakes, taking up one at a time and giving much opportunity for repetition of this form.
 - d. Play language games for drill on the correct form of those expressions most frequently used incorrectly in daily speech.
4. To correct speech defects in individual cases. The most common of these are lisping or some form of baby talk, and stuttering. Accurate, fluent, vivid speech is likely to be accompanied by clear thinking and vice versa. Defective speech should not be neglected, for it may grow worse. The cause may be a defect of the speech organs, defective hearing, imitation of speech defects, emotional difficulties, lack of motor control, or a combination of factors. The treatment depends upon the cause and much harm may be done when expert help in diagnosis and therapy is not obtained.

LEARNING ARITHMETIC

Opportunities for Number Experience. — Opportunities for number experiences are numerous. There are many real things which children are interested in counting: the number of children present, the number of drawings completed, the number of flowers in bloom, the number of napkins needed for a party, and the like. There are many opportunities to secure a comprehension of quantities by seeing collections of definite numbers of things: fifty books, one hundred pencils, seventy-five children on the platform, a pile of 150 apples brought by the children as a Thanksgiving gift, and similar groups of objects the number of which is known. Sometimes in their constructive activities children need to cut and fold paper in halves, thirds, fourths, sixths, eighths, tenths, and twelfths and thus get concrete experience with fractions. Buying crackers and milk for a midmorning lunch, buying a regular noon lunch, counting money contributed for some special purpose, buying stamps to put on letters written to absent children, all give practice in the accurate and meaningful management of money and incidentally in number combinations. A child's birth-

day and special events and holidays furnish opportunities for writing dates and ages. Watching the clock in order to follow the daily program written on the board provides practice in telling time. Building playhouses, cooking, and being weighed and measured necessitates the use of inches, feet, pounds, and ounces.

Specific Suggestions. — Some specific suggestions for teaching arithmetic in the primary grades are:

1. First of all, learn about the experiences which each child brings to the grade. It has been estimated that only ten among thirty-five children in a typical first grade will have become perfectly familiar with the number series and will have acquired the ability to count a number of things. If arithmetic problems and processes are introduced before the child has attained sufficient mental maturity and experience, he is likely to think of arithmetic as a difficult subject and of himself as unable to cope with it. Teachers should know where the child is and meet him at that stage of achievement.
2. Teach the fundamental arithmetical concepts and processes in connection with the number situations of everyday life. Thorndike,¹⁷ more than fifteen years ago, strongly advocated the organizing of learning in arithmetic around the problems and purposes of real significance to the child. A rich background of concrete arithmetic should lead more easily to the manipulation of abstract numbers.
3. Introduce new number facts and processes slowly so that each will be thoroughly mastered before the next step is taken. Introducing new material too rapidly is likely to result in practice in errors, indirect methods of computation, such as counting on the fingers, and under-learning of many essential facts.¹⁸ Wrong answers and inefficient methods of study are serious because they

¹⁷ Edward L. Thorndike, *New Methods in Arithmetic*. Chicago: Rand McNally and Company, 1921.

Edward L. Thorndike, *The Psychology of Arithmetic*. New York: The Macmillan Company, 1922.

¹⁸ W. A. Brownell and C. B. Chazal, "The Effect of Premature Drill in Third Grade Arithmetic," *The Journal of Educational Research*, XXIX (September, 1935), 17-28.

tend to persist. It appears to be true that problems involving reasoning found in standard arithmetics in the elementary grades are too difficult.¹⁹ Moreover, "haste makes waste" in learning. Errors increase enormously when children are urged to speed up beyond their level of proficiency.

4. Provide for individual differences in ability. The goals or objectives as well as the methods of instruction should be adapted to the ability, maturity, and previous experiences of each child
5. Give instruction in what appear to be the most efficient methods of performing specific operations, as, for example:
 - a. In addition think results only, rather than number and results, i e., in adding, 7, 6, 9, 5, think "13, 22, 27," rather than "7 and 6 are 13, 13 and 9 are 22, 22 and 5 are 27."
 - b. Add orally single columns having a sum above nine.
 - c. Be sure to write each digit plainly
 - d. Before beginning to work a problem, be sure to understand the process to be used.
 - e. Establish the habit of checking results. There is a danger in premature drill in arithmetic or other tool subjects. If the children are not ready for the drill or do not perceive its usefulness, they tend to maintain the procedures they have previously used to satisfy their number needs. Drill has a place. But its place is in response to a real need felt by the pupils. Drill can be an effective aid to learning if the drill offered is based on a diagnosis of the physiological, mental, emotional, social, and environmental factors involved in the ability to be acquired.
6. When difficulties are encountered, help the pupil to locate the causes and to correct them before going ahead. Difficulty in arithmetic is cumulative. The burden of unsolved problems increases as the child goes from grade to grade. Hildreth²⁰ describes in detail diagnostic and

¹⁹ W. H. Pyle, "An Experimental Study of the Development of Certain Aspects of Reasoning," *The Journal of Educational Psychology*, XXVI (October, 1935), 539-546

²⁰ Gertrude Hildreth, *op. cit.*, pp. 610-647.

remedial methods in arithmetic and recommends a number of tests for measurement and diagnosis in this field. The analysis of a survey test given to the entire group will show the position of each child in relation to the group and to the test norms and the kind of errors made by each child. Further analysis would show more clearly the specific arithmetical abilities in which the child is weak, the arithmetic processes by which he arrives at a given result, his attitude toward arithmetic, and any physical or emotional factors that may be interfering with his success.

The following quotation taken from Maxim's *A Genius in the Family*²¹ illustrates concretely the way in which an inadequate idea of arithmetic, acquired in school through instruction that emphasized in the beginning formal, abstract ideas of dealing with number, was changed by introducing number in the form of concrete experience:

When Florence had been at school long enough to begin arithmetic, something happened and she could not go on. The child appeared unable to grasp what it was the teacher wanted her to do. Possibly it was the combination of a stupid and unimaginative teacher and an intensely imaginative and high-strung child. . . .

The teacher informed my mother that Florence had exhibited a total inability to understand arithmetic. Manifestly the child was defective mentally.

There was a long conference during which my mother got it across to my indignant father that the trouble had been arithmetic, and if he would take a hand in the matter Florence might be brought out of her difficulty. . . .

After supper he inveigled Florence into some sort of conversation about games and puzzles. . . . Finally he said

"I say, Florence, you ought to be the kind that enjoys arithmetic. You have such a clear mind that you would be good at it. It's lots of fun when you play it the right way. Do you have arithmetic at your school?"

Florence was not enthusiastic. She indicated that they had arithmetic at her school but she did not like it.

"Oh well, if you don't like it then they are not playing it right. Let me show you how we used to play it when I was a boy down in

²¹ Hiram Percy Maxim, *A Genius in the Family*. Sir Hiram Stevens Maxim through a Small Son's Eyes, pp. 113-121. New York: Harper and Brothers, 1936.

Maine Percy, go down to the kitchen and fetch me a handful of beans .

"Now, Florence, I'm going to play arithmetic with Percy first After you see how we play it I shall play it with you, because I know you would play it better than most people. You are much smarter than most children of your age." . .

In a short time Florence was insisting upon adding the groups of beans that her father laid out, and the two children were soon shouting out the answers with the greatest enthusiasm

He led little Florence into adding all sorts of combinations, gradually shifting into subtraction without her realizing it We played the game all the evening, he being clever enough to keep changing it so that our interest was not allowed to flag. . . .

From that day Florence stood first in her class

None of us ever found out what happened in Florence's mind to cause this remarkable shift I think I knew her better than did any one and I have always believed that the clever manipulation by my father straightened out some sort of preconceived notion which had been holding her back.

Psychic satiation resulting from the child's work habits, temperament, intellectual level, and self-evaluation accounts for cessation of work more frequently than real fatigue, especially in the case of so-called problem children If a positive work habit can be developed and self-confidence increased, work efficiency can be increased.

LEARNING TO LIVE WITH OTHERS

Learning to live with others is the core of the curriculum.²² Through building a house, a city, a farm, children in primary grades may acquire a realistic knowledge of themselves and society, gain fundamental skills, and develop interests, good habits, and attitudes. The task of the teacher is to study the pupils as individuals and to provide the experiences which his study shows to be desirable.

SATISFIERS AND ANNOYERS IN LEARNING

Since satisfaction helps and annoyance hinders learning, it is well to know what makes an act satisfying, and what makes it annoying to primary children. The following lists are suggestive:

²² Ernest W Tieg, *The Management of Learning in the Elementary Schools*, pp 172-181. New York: Longmans, Green and Co., 1937.

SATISFYING	ANNOYING
Doing something that he is ready and eager to do	Doing something that he is not ready to do or that interferes with what he is interested in doing
Carrying out a natural tendency, such as resting when tired, eating when hungry, playing with others, making collections, being active physically and mentally, winning a game, beating his own past record	Not being able to carry out a natural tendency
Gaining the approval of the teacher or other person whom he recognizes as superior in ability, attainment, or personality. The approbation of some people is much more valued than that of others.	Gaining the disapproval, scorn, or blame of others whose approval he values
Succeeding in getting the desired results such as recognizing a word, following directions, or answering a question correctly	Failing to get desired result
Winning some privilege as the result of good work, such as the natural pleasant consequences of an act or being permitted to deliver the letter he wrote well.	Being deprived of some privilege, such as not going to the circus, or being detained after school when he wishes to go somewhere else

QUESTIONS AND PROBLEMS

1. How may the meanings of words be enriched?
2. If talking in school is natural for a child, what opportunities for talking in school may be provided?
3. What can a parent or teacher do to help primary children increase their vocabularies?
4. Give some suggestions for changing habits of grammatically incorrect speech.
5. What can the parent or teacher do to encourage a child to speak in an interesting, vivid, forceful way?
6. Discuss the importance and nature of readiness to learn reading, writing, and arithmetic.
7. In what ways can a teacher aid a child in learning to write?
8. Mention situations in which a child feels the need for writing, and show how these situations may be used advantageously in teaching writing.
9. List the various experiences involved in learning to read.
10. Give five suggestions for increasing interest in reading.

11 What characteristics of books make them interesting to primary children?

12 Which is more important in arithmetic — accuracy or speed?

13. How may errors in arithmetic or in spelling be avoided?

14 Give an illustration of the effect of success or of failure on a child's reading ability. How may a child's idea of himself be changed by his success or failure to learn the three R's?

15 By what means can a primary school room in a poor urban district be made to increase the range of the children's interests and vocabularies?

16 In what ways may play at school be of especial value to children from widely scattered rural homes?

17 Help a group of children dramatize a favorite story. Notice how a little costuming and a slight rearrangement of furniture help them to act. How may the giving of a play be used to improve children's reading and writing ability as well as their conversation?

CHAPTER XVI

SPECIAL PROBLEMS OF THE PRIMARY PERIOD

A *problem* may be defined as an individual's failure to achieve his potentialities and meet socially accepted standards. Sometimes this discrepancy between performance and potentiality is apparent to child and adult, sometimes it is unrecognized. As a rule, parents and teachers readily identify aggressive behavior, rudeness, stealing, and similar acts as problems, but they tend to neglect oversensitiveness, shyness, withdrawal from social contacts, timidity, and failure to develop special talents and abilities.

Kinds of Problems. — It is essentially impossible to classify the personality difficulties of children. They can be understood only by a study of the child himself along with the school, the neighborhood, and the family situation in which he is enmeshed. To label a child's behavior is not to understand it. In fact, to put a child in a certain category may serve merely to obscure the real difficulty.

Nevertheless, certain common ingredients of behavior difficulties may be identified. Among these are faulty adjustments to details of the daily routine, difficulty in getting along with people, and unsatisfactory scholastic performances. The personality difficulties relating to eating, sleeping, control of excretion, dressing, table manners, and other personal habits have already been discussed in the chapters on the preschool child. Such matters of routine are important in the adjustment of the school child also. At the same time routine should not crowd out a sense of adventure. One youngster, brought up according to an inflexible schedule complained one day, "Well, now I eat, and then I sleep, then I go outdoors, then I eat, then I sleep, then I go outdoors. That's all I do." Fortunately reasonable regularity

is not incompatible with a sense of adventure. A child's life need not be so routinized, so sheltered that adventures are not frequent. Measures for safety and health and obedience may be carried too far. Life must always be worth living first, worth saving second.

Numerous maladjustments of elementary school children arise from difficulties in emotional adaptation to other people¹. These may take the form of such emotional habits as fear and temper tantrums; of emotional attitudes of aggressiveness, timidity, oversensitiveness and lack of co-operation; or of antisocial behavior. The very attempt to correct some of these difficulties sometimes results in increased anxiety, fear, and other emotional disturbances.

Scholastic difficulties constitute another large problem area and arise from unsuitable standards and methods of instruction, specific disabilities of individual children, or habits of inattention, daydreaming, and the like. Failure in school work frequently is an antecedent of truancy, obstreperousness, and other forms of personal and social maladjustment. Children who make normal progress through school usually present the fewest behavior problems.

Functional psychoses generally are considered a rare occurrence in childhood. Children's emotional patterns, although resembling typical adult psychoses, may not be identical with them. Childhood psychoses appear to arise from incomplete intellectual growth in connection with strong drives.² Of 1,000 behavior problems of children in the age range from five to seventeen, 2 per cent were diagnosed as psychotic. Of these twenty children, thirteen were diagnosed as schizophrenic and six as psychopathic personality with psychosis. In all cases social, emotional, and intellectual de-

¹ Leo Kanner, "Types of Maladjustment in Children," *Personality Adjustment of the Elementary-School Child*, Fifteenth Yearbook of the Department of Elementary School Principals, National Education Association, July, 1936, pp. 438-444.

² Paul Schilder, "Reaction Types Resembling Functional Psychoses in Childhood on the Basis of an Organic Inferiority of the Brain," *Mental Hygiene*, XIX (July, 1935), 439-446.

velopment was not normal³ These kinds of difficulties indicate the need for expert diagnosis and therapy.

Contrary to popular beliefs the black sheep in a family may not have been born black He may have acquired his unsavory reputation as a result of poor ways of meeting situations which had their roots in the preschool or school years. One nine-year-old boy with an intelligence quotient of 135 was rapidly building a pattern of dislike of school, disobedience at home, antisocial behavior in the neighborhood. His mother cried because of his misdeeds and said she would have to put him in a reform school. At that critical point a Sunday School teacher entered into the picture. She gave the boy repeated experiences of having good times in socially acceptable ways She conveyed to him her confidence in his ability to succeed in school and to behave better at home. She made a few specific suggestions about study habits and home routine The fact that an outsider was taking an interest in the boy and showing confidence in him changed the parental attitude toward him. Those factors plus other unrecognized influences brought about a habit revision which culminated, three years later, in apparently excellent adjustment The mother expressed her pleasure in his progress and the boy himself wrote in a personal letter:

I am now a pupil in junior high school and am in class "RA1" which means *Rapid Advancement*, and like it very much. I am trying very hard so that my mother will be proud of me. Mother says my writing has improved Do you think so? I now have a job delivering newspapers I earn \$2.50 a week and that is a good help to mother If I behave myself, mother says I can go to the Y.M.C.A., for swimming instruction this winter.

A far more serious problem was reported by Hohman:⁴ An eight-year-old boy had been dismissed from a boarding

³ L. A. Lurie, E. B. Lietz, and J. Hertzman, "Functional Psychoses in Children," *The American Journal of Psychiatry*, XCII (March, 1936), 1169-1184.

⁴ Leslie B. Hohman, "Problem Child or Problem Habits," in *What Science Offers the Emotionally Unstable Child*. Proceedings of the Third Institute on the Exceptional Child of the Child Research Clinic of the Woods Schools. Langhorne, Pennsylvania, 1936, pp. 16-30.

school because the headmaster felt that, over a period of two years, the school had been unable to effect the slightest improvement in the pupil's conduct. The failure was especially deplorable because the school had and still has an excellent standing and had the aid of a psychiatrist in working with the child. Yet, the boy remained low average in his classes and was heartily disliked by the children. He was slovenly in appearance, unreliable, arrogantly boastful, cowardly, and timid. He had a violent temper during which he would break things and strike other children. He lacked bladder and bowel control and masturbated openly. The boy's hereditary background was unfavorable and his parents' marriage unsuccessful. Up to his eighth year he lived, when at home, with his father and stepmother. When he was dismissed from the private school, his mother assumed the guardianship of the child. His stepfather, an "intelligent, hardworking, methodical and doggedly determined person," took upon himself the task of the boy's habit revision. He outlined the rules of the game to the boy and permitted no deviation from them.

Life became a matter of conduct and consequences.⁵ After the boy had been good, something desirable happened as surely as something undesirable occurred when his behavior was unacceptable. At the end of three years of rigorous training the boy has become popular with other boys, neat, and well mannered. He has developed interests in radio, reading, sports, his dog, and stamp collecting. Because of his reliability and trustworthiness, he was chosen as one of the school policemen. It would be enlightening to follow this case in order to see whether the habit revision was permanent and whether the initial maladjustment cropped out in other forms. It is reasonable to suppose, however, that goodness makes children happy as truly as happiness makes them good.

This case study illustrates the application, in an extreme form, of the rule that

⁵ *Ibid.*, p. 23.

no child holds onto any pattern of behavior, good or bad, that does not net the child a return which seems to it serviceable.⁶

Behavior is a function of the situation as well as of the individual. This fact must always be kept in mind in dealing with behavior disorders of children. It is not only the child that must be changed; the situation, too, must be altered. To attempt to change a child's attitude and then to send him back into the same conditions that originally caused the difficulty is to invite failure in adjustment. The resulting failure may intensify a child's insecurity and lack of self-confidence and the inexpert tinkering with his problem will make his last state worse than his first.

THE "NERVOUS" OR EMOTIONALLY UNSTABLE CHILD

"Nervousness" Defined.—Some people are nervous when they have to speak before an audience. They feel inadequate to the situation. Some people are nervous about undertaking a new piece of work. They fear they may not be able to succeed in it. Nervousness usually accompanies a feeling of inability to meet the situations life offers. One third-grade child of superior intelligence had not been taught to read in the first two grades. In the third grade he began to feel his deficiency keenly. The other children ridiculed him. He worried, lost interest in school, and became nervous and restless. The nervous child is one who is failing to respond satisfactorily to his school or home conditions. He is unhappy and unstable.

Characteristics of "Nervous" Children.—How does a child show nervousness? He may show jerky, involuntary movements called *tics* or motor habits, partly voluntary and partly involuntary. He may manifest nervous habits such as nail biting or thumb-sucking. Or he may show a generalized motor restlessness. The nervous child usually exhibits a lack of repose, is fidgety, and "never sits still." He may lose his temper easily, show extreme timidity, or do the thing that is easiest regardless of whether it is best. Since

⁶ *Ibid.*, p. 26

he has failed before, he approaches new problems with anxiety and a feeling of insufficiency. He is afraid he will not pass the test or win the approval of the group. He may become irritable, extremely sensitive to criticism, and laugh or cry over nothing. He may try to get satisfaction in other ways than by success in his work. Daydreaming, in which he pictures himself successful and popular, lording it over smaller and weaker children, or being very egotistical or very humble are ways in which a child may try to compensate for his lack of actual objective achievement. He is lacking in equanimity with which to bear any thwarting of desire, and responds to difficult situations as a very young child might, rather than as a child of his age should. Any or all of these symptoms may be observed in nervous children.

Individual Differences. — Even cats show individual differences in their reactions to difficulty. Thorndike⁷ observed that some cats struggled with extraordinary vigor to escape from confinement while some do not "struggle so vigorously or get so excited as the rest." On some occasions these more emotionally stable cats did not struggle at all. Great differences may be observed in the response of young children to failure. In Marston's⁸ experimental situation of the duck hunt in which the child made a choice between two boxes, one empty and one containing a toy duck, some children responded promptly to each presentation of the pair of boxes, "showing no hesitancy or perplexity even after consecutive failures." Other children sought to "escape the discomfort of indecision and the disappointment of failure by turning to other activities." One girl after three successive failures said, "I think it's time I must play now," and at the next failure, "I think it's time to go to school now." Individual children's attitudes toward failure may be observed in their everyday home and school activities. There are great individual differences in this respect not only be-

⁷ E. L. Thorndike, *Animal Intelligence*, p. 35. New York: Teachers College, Columbia University, 1911.

⁸ Leslie R. Marston, *The Emotions of Young Children*. Studies in Child Welfare, Vol. III, No. 3, pp. 62-65. Iowa City, Iowa: University of Iowa, 1925.

tween children but in the same child at different times. Brilliant individuals frequently are nervous in particular situations.

Treatment of "Nervous" Children. — How should a nervous child be treated? The sources of nervousness must first be found. By observing the child, parent and teacher may obtain much pertinent information. Olson⁹ studied children during class hours, noting the occurrence of nervous motor habits. Such observations may result in a better understanding of children. The factors to consider are the child himself and the environment. In the first place, the child may have inherited a nervous system which makes him abnormally irritable to all kinds of stimuli. He takes things hard. His failures may really be insignificant, but they loom large to him. The teacher and parent should criticize such a child as little as possible. Approval of his successful responses should be bestowed heartily. The good points in less satisfactory behavior should be mentioned and ways of improving should be stressed. Direct disapproval, however, is likely to check rather than stimulate further effort. "A spoonful of tar will spoil a cask of honey."

In the second place, the child may be in poor physical condition due to malnutrition, diseased tonsils or adenoids, eyestrain, too much dosing with cathartics, some error in feeding, anemia, lack of sleep and rest, and overstimulation of any kind. Such a child should be examined, and any physical defects or deviations from a desirable daily schedule should be corrected.

The environmental causes of nervousness are more numerous.

1. A child may be nervous because too much is expected of him. He fears failure. The same situation would not disturb a better-balanced child. The work given him is too hard for him. He lacks the native ability to do it. One child in a family may not be so bright as his parents or his

⁹ Willard C. Olson, *The Measurement of Nervous Habits in Normal Children*. Institute of Child Welfare, Monograph Series No. 3. Minneapolis, Minnesota: University of Minnesota, 1929.

brothers and sisters. The same level of achievement cannot be set for him. It is no use trying to make him more ambitious if he lacks ability to reach standards set for those of greater native capacity. In a case of this kind, the parent and teacher should provide work suited to the child's capacity so that he will be able to succeed reasonably often. They should not require too much work. They should not push the child beyond his ability to achieve without strain. In addition to the school work, some parents require the child to take music, French, and dancing lessons. Other parents require excessive work in the home or neighborhood. Some home duties are desirable, but they can be made "too much of a good thing."

2. A child may develop nervousness because of inability to adjust himself to a home situation in which he never knows what will be expected of him. The parents squabble over policies and methods of treating him. They do not consistently demand a few essential things. They nag. In some homes the child is exposed to a continuous bombardment of commands from morning to night. He is "talked at" continuously. Another factor in causing a feeling of insecurity is the discrepancy which a bright child notices between the standards of the parents and those which they set up for the children.
3. Emotional conflicts on the part of parents frequently affect the child unfavorably. He is disturbed by family dissension. Parents who quarrel with each other, who are tense, gloomy, worried, anxious, and fearful may transfer some of their emotional disturbance to their child. Such a home atmosphere may make a child "nervous." Likewise, a knowledge of the parents' conscious sacrifice for the child may make him feel unwanted and insecure.
4. The teacher as well as the parent frequently adds to a child's emotional instability. "A dyspeptic, sarcastic, irritable, or nagging teacher can lower health values and bring about nervous disorders and emotional difficulties." A teacher who tries to shame the child out of his nervousness is more than likely to aggravate the difficulty.
5. A school program that is too confining, that provides little opportunity for physical activity and for working uninter-

ruptedly on tasks that are interesting, increases restlessness and irritation.

6. Poor training in the preschool period may be the cause of "nervousness" in the primary grades. The child who has been protected from everything unpleasant, who has had all the rough places made smooth for him, and who is still "mama's pet" and dependent on her for everything, is very poorly equipped to adapt himself to the authority of the school and to meet the difficulties primary work presents. He feels a lack of power to adjust himself to school situations. Nervousness is the first sign of inability to cope successfully with the new problems of authority and the world of reality he meets in school.

Suggestions for Studying Nervous Children — Essential steps in studying any kind of maladjustment in children are presented in Chapter XVII. Specific suggestions for dealing with unstable children may be derived from the preceding analysis of causes. In addition, Dr. Leta S. Hollingworth's statement of guiding principles in the management of unstable children will be helpful to teachers and parents:

1. In the first place, the child must be trained to face the real world, with all its disagreeable facts and restrictions.

- 2 The parent should never fight the child's battles for him

3. The parent should avoid much coddling of the child. Slight illness should not be made an occasion of rushing all manner of satisfiers to the child, of making him the center of attention, of removing all responsibilities from him

- 4 Train for self-reliance from the earliest years.

5. Do not communicate fear to the child through being yourself fearful.

- 6 See to it that the work of the child is appropriate to his capacities; that he or she is not being held at tasks which are too easy or too hard.

7. Do not show favoritism or partiality in the family. Let justice prevail.

8. Give rational sex education Answer the child's questions Tell him or her the truth ¹⁰

¹⁰ Leta S. Hollingworth, *Helping the Nervous Child*, pp. 11-18 New York: The Lincoln School of Teachers College, 1927.

Some of the causes of restlessness and inattention and suggested treatment of each are summarized in the following chart:

CAUSES	REMEDY
Fatigue * due to a work period which seems to be too long	Provide activities suited to the pupil's ability and previous experience and allow him to move about freely while engaging in these activities
Physical defects, such as defective vision and hearing, diseased tonsils and adenoids	Give a medical examination and see that defects are corrected
Poor physical condition—malnutrition	Provide an adequate diet and encourage the practice of health habits.
Too difficult work	Find out intelligence and achievement of pupils, fit work to pupil's capacity Show him methods of attacking special difficulties
Work not related to life	Take advantage of the opportunities for learning in the child's total environment.
Lack of definite aims or purposes	Give the child opportunity to choose many of the activities in which he will engage
Lack of knowledge of results.	Have child keep record of his achievement
Poor study habits	Establish habit of definite time and place for study, of studying for specific purpose, etc More important than these devices, is the encouragement of pupils to engage in worth-while activities so wholeheartedly that habits of sustained attention and industry are inevitable

* Fatigue is discussed by Max Seham and Grete Seham in *The Tired Child* Philadelphia J. B. Lippincott Company, 1926, and in a short article by one of these authors Max Seham, "Recognition of Fatigue in the School Child," *Elementary School Journal*, XXIX (October, 1928), 106-113.

STUTTERING

Causes of Stuttering. — Why do approximately ten out of every 1,000 children stutter? Probably there is no single cause which produces the condition. It may be acquired by

imitation. One stuttering child in a class may start a mild epidemic of stuttering. Sometimes a child may be shocked or alarmed into stuttering. He catches his breath through fear or excitement. That catching of the breath is a characteristic feature. Normally words and sentences are spoken on the outgoing breath, but in stuttering speech is attempted during inspiration. Stuttering likewise appears to be associated with emotional disturbance, such as fear and feelings of inferiority, inadequacy, or insecurity. A stutterer frequently can speak freely under certain circumstances, but under conditions of fear or anxiety, or in the presence of certain persons his speech difficulty becomes marked. One mother took her eight-year-old boy to a speech specialist. The boy talked to the doctor without hesitancy whereas in the classroom he stuttered very badly. Cases have been accumulated which show a temporal relationship between stuttering and changes in handedness.

Treatment of Stuttering. — In the treatment of stuttering an important factor is the individual's reaction toward his stuttering. If he thinks of himself as abnormal, the symptoms are aggravated and accentuated. Accordingly, care should be taken not to give the child the idea that there is anything seriously wrong with him or that people are anxious about him.¹¹

Dunlap's ¹² method of curing stuttering by having the subject practice his very best stuttering voluntarily for a certain time each day is not generally applicable, but has, in some cases, increased self-confidence and success in communication. Any method that relieves the individual's tension about stuttering and gives him greater emotional security may result in more effective control of his speech.

Different methods will be effective with different children. There is no *one* best method. When dealing with a tense, anxious child the teacher or parent should speak slowly with

¹¹ Robert West, "Is Stuttering Abnormal?" *The Journal of Abnormal and Social Psychology*, XXXI (April, 1936), 76-86.

¹² Knight Dunlap, *Habits, Their Making and Unmaking*, pp 196-210 New York: Liveright, 1932.

no appearance of haste, impatience, anxiety, or annoyance. The child should be encouraged to take plenty of time, prolonging the vowels in the same speech pattern that the teacher uses in speaking to him. When a child begins to stutter, the teacher should encourage him to try again at a normal rate pattern to repeat the troublesome sentence until he does it easily. Making slow rhythmical movements with the hands while prolonging the vowels has been found helpful. Under favorable conditions of instruction and classroom relationships more opportunity rather than less than is usually given to these children to speak in natural situations should be provided for stuttering children. Otherwise they get little practice in taking part in social life. To put a little child into the care of an easy-going person such as a colored mammy, has proved to be successful treatment. The child should be relieved, if possible, from influences at home and at school that cause tension and anxiety, and should be encouraged in building up more effective speech patterns.

THE CHILD WHO LIES

There are many varieties of lies. Some are manifestations of a genuine intention to deceive and represent an habitual response to a trap situation. Others are induced by some environmental influence. Persons who pry into children's private affairs invite falsehood or rudeness. Evasions under such circumstances signify no fundamental personality deviation. Obviously, diagnosis involves a study of the situation as well as the child's response.

A study¹³ was made of 289 descriptions of situations in which six-year-old children intentionally misrepresented facts. These descriptions were written by adults who were in a position to observe some child. The type of situation in which these children most frequently lied was that in which

¹³ A. Max Carmichael, "To What Objective Stimuli Do Six-Year-Old Children Respond with Intentional Misrepresentation of Facts?" *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXV (March, 1928), 73-83.

(1) the child had committed an irregular or non-conforming act and was called upon to account for the act

In 28 per cent of these cases punishment was involved. The other kinds of situations often evoking lies were: (2) the child

wanted to obtain, keep or care for property, (3) he was competing with another, (4) he was being forced by another into performing some act, and (5) his activity was being frustrated by another.

It will be noted that in all these cases, the little child used lying as a way out of a difficult situation. It was an avenue of escape. To counteract lying of this kind the child should be helped to acquire certain positive skills and knowledge. He should be helped to discover and use better methods of escape from such difficulties.

THE OVERAGE PUPILS

Every year large numbers of children are "left back" in the first, second, and third grades. Thus, they begin their school careers with a sense of failure and, during the ensuing year, under the same distasteful conditions, they must repeat the work they have already attempted to master without success. It is to be expected that many of them will make little progress when they cover the work of a grade a second time. Whatever progress some of these children appear to make is due to their increased maturity rather than to the method of retardation. Retardation is not the solution to the problem of school failure.

Other solutions have been suggested. One of these is the promotion of pupils chronologically rather than on the basis of set standards of achievement. It is in operation in some school systems at the present time. The method encounters difficulties when the pupils in the higher grades become more and more heterogeneous in their achievement and when they are transferred to schools having different standards.

Another solution that has been widely used is the so-called homogeneous grouping. The children are segregated into

classes on the basis of their ability to achieve and on this basis of selection appropriate instruction is given. The slow group may move through the grades more slowly than the average group or it may be graduated in the normal time with lower standards of accomplishment. The bright group may be graduated early or it may remain in school the usual number of years, enjoying an enriched curriculum.

The only satisfactory solution of the problem of failure lies in the individualization of education. From the first grade the needs and abilities of each child as well as his readiness for reading, writing, and arithmetic should be ascertained. Then appropriate educative experiences should be provided for him. At the end of each school unit the person who knows the pupil best should take in hand all the information accumulated about him and write a statement of his specific accomplishments. The report should include observations regarding his strengths and weaknesses, and recommendations for the next steps to be taken to further his development. Such a statement, passed on with the pupil, enables teachers and administrators in the next school unit to fit the curriculum and methods of instruction to his specific needs.

ABSENCE AND TARDINESS

Absence and tardiness have been considered as primarily administrative problems. They are, however, essentially guidance problems. Truancy and tardiness are important symptoms of maladjustment.

Children go willingly to school when the work is suited to their ability and interests. In one experimental school the dull normal children, among whom the percentage of truancy was high, came regularly to a school where they could succeed.

Absence Due to Illness — Absence due to illness is another matter. Absence due to communicable disease can be greatly reduced by the vigilance of parent, teacher, nurse, and physician and by their alacrity in detecting the first signs of communicable disease. They must be quick to note a new

cough, reddened eyes, running eyes and nose, flushed face, and to isolate suspicious cases. It has been found profitable to require children and teachers having colds to stay at home. By so doing, they lose a few days, but the total loss to the class is less. New discoveries are constantly making it possible to protect children by immunization against certain specific diseases, such as diphtheria, scarlet fever, and typhoid.

A second way in which disease is kept from spreading is by establishing habits among pupils of keeping objects out of the mouth, washing the hands before eating, covering the nose and mouth with a handkerchief when sneezing or coughing, and avoiding too close contact with other children. These habits the youngest and dullest primary child can be taught to form.

Other types of health disorders may frequently be traced to unhygienic habits of living, such as eating unsuitable food, being irregular and hasty in eating, keeping late hours, and disregarding other simple laws of health.

Absence Due to Other Causes — Some absences occur because the parents require their children to remain at home. In one kind of social environment children are kept out of school to work in factories, on farms, or in the home. On another social level, children are over-coddled and not permitted to leave their homes because the weather is too cold or too rainy.

Occasionally, absence is due to forces over which neither child nor parent have control, such as a railroad tie-up, impassable roads, and quarantine.

Causes of Tardiness — The most frequent causes of tardiness among primary children are:

1. Undeveloped sense of time.
2. Other interests greater than interest in school.
3. Late hours the night before.
4. Poorly planned morning schedule.
5. Work to do at home.
6. Lack of co-operation of parents in helping the little child to get to school on time.

7. Forgetting something and having to go back for it
8. Dislike of school.
9. Satisfaction in the attention attracted by late entrance.

Suggested Remedies. — Some remedies are.

1. Develop time sense by asking the child to "See how much you can read in five minutes" "See how many arithmetic problems you can do in ten minutes," etc.
2. Make school more interesting than the other things that cause delay. One teacher of retarded children noticed that they were always on time on the morning when they went to assembly with the other children, while they were frequently tardy on mornings which began with their regular class periods. A story, a game, a class program, or a favorite subject scheduled for the first period in the morning will furnish a stimulus to come early.
3. One requisite for getting up early in the morning is to go to bed early the night before. This is the first step in starting the new day right.
4. Even first-grade children can participate in a well-planned morning schedule which allows time enough for everything. The teacher may help by having them dramatize "What to do in the morning before school." A cardboard clock may be used to point out the hours, and the details of bathing, dressing, eating, collecting books and wraps, starting for school, walking or riding to school, and entering the classroom at the appointed time may be worked out and made vivid by dramatization.
5. If the child has chores to do at home which make him late, some arrangement must be made with the parent or some adjustment by the school. A bright Italian boy was constantly late because he had to keep store while his father went to market. Arrangements were made so that the boy was permitted to come an hour late without being marked "tardy."
6. If the parents keep late hours at night, get up late in the morning, or fail to help the child plan his early morning efficiently, the child is greatly handicapped in his efforts to be to school on time. The younger the child, the more difficult it is for him to leave for school without the co-operation of the parents. If the teacher helps plan the

morning schedule with the parents as well as the child, and all work together to put the plan into practice, the best results will be obtained

Attendance and promptness probably have been emphasized out of all proportion to their significance in the child's development. They are the cause of much irritation. And largely to keep the official record sheets looking well! As cues to underlying problems of adjustment, however, they have guidance value.

PROBLEMS OF DISCIPLINE

Every parent and teacher is confronted with the problem of dealing with "naughty" children. One parent's method is fundamentally sound. Before taking any action she sits down and tries to imagine herself in the child's place and to understand why he behaved in a particular way.

Primary children are not naturally "naughty." In fact, there probably is no age period in which children co-operate so willingly with adults, if conditions are favorable. The necessity for punishment may be avoided by satisfying in legitimate ways the basic needs of childhood. Children who feel secure, achieve reasonable success, get the affection they crave, and who have something definite, interesting, suitable, and important to do are not likely to get into mischief. They should have freedom to choose their own line of action whenever possible. They should understand why the few sensible and reasonable rules of the home and classroom are necessary so that they will be willing to obey them. This is not difficult in the primary period because children of this age tend to accept rather than question adult authority.

Moreover, in the majority of homes and classrooms the proportion of reward to punishment should be much larger than it is at present. A search through more than a thousand biographies¹⁴ revealed that rewards, in retrospect at least, were considered to be almost universally beneficial whereas punishment appeared to do harm twice as often as good. In

¹⁴ Edward L. Thorndike, *et al.*, *Psychology of Wants, Interests and Attitudes*, p. 140. New York: Appleton-Century Company, 1935.

certain homes and schools the ratio of sincere approval to punishment has been increased with excellent results; it may well be as high as fifty to one.

Whipping children, which in the last century was such a common method of control, has been abandoned in all but a few communities. Today children are rarely whipped in school and behave better than they did seventy-five years ago. The ineffectiveness of this form of punishment has been demonstrated repeatedly. Of the problem cases described by 100 teachers not one was solved by whippings. Visiting teachers frequently find a child's emotional difficulties aggravated by beatings at home. Parents have said, "The more I whip him, the worse he gets."

In so many cases corporal punishment is ineffective because the dissatisfaction accompanying it may be attached to the teacher, the parent, or the entire school situation rather than to the wrong act. It may destroy the friendly, confidential relationship between child and adult which is so essential to successful guidance. Attitudes of fear, anger, and dislike for the individuals and institutions involved may result from corporal punishment. If the child feels that the punishment was unjust because he is innocent of wrongdoing, or could not help it, or did not mean to do it, his sense of justice may be distorted. Physical punishment is the lowest level of appeal and should be used only in exceptional cases.

Today there may be a tendency for parents to swing too far in the direction of releasing their children from any restraint or discipline. "For whom the Lord loveth, he chasteneth" has a great deal of truth in it. If a person cares very little for another, he is willing to let him go his own way without attempting to correct him. To help an individual eradicate personality fault lines requires effort which the person who has slight interest in another's welfare is not willing to exert.

When punishment seems to be involved for the good of the individual or the group, psychology suggests several ways of proceeding: (1) Be sure that the punishment belongs to

the undesirable behavior (2) Shift attention from the punishment to the more satisfying activities possible in the future. (3) Search for ways of rewarding desirable behavior, thus crowding out the disapproved acts

The psychology and philosophy of punishment are far in advance of practice. Schools still make extensive use of such artificial and extrinsic rewards as prizes and honor rolls and such punishments as detention, extra work, threats, restitution, isolation, and sarcasm. Teachers still too often focus their attention on deviations rather than on development and on remedial rather than on preventive work.

HEALTH PROBLEMS

The Child Who Never Eats a Good Breakfast — "Nancy is so excited about school she has no appetite at all. In the morning she is so anxious to get to school early that she runs off without her breakfast. At noon she won't take time to eat for fear she will be late getting back." What should the mother do? It is necessary to begin the night before by having Nancy go to bed early, so that she can get up early enough to allow at least an uninterrupted half-hour for breakfast. A schedule should be worked out with Nancy's assistance. She may make this schedule in picture form — a picture of each activity on a clock face with hands pointing to the time at which the activity begins. She will need reminders and approval at first, but before long the early morning routine should become a habit.

The parent must try to make breakfast time a pleasant time by avoiding scolding, nagging, quarreling, haste, and nervous fussing about food. Attractive dishes and food help to make breakfast a welcome meal and cost very little in time or money. A variety of fruit and cereals, and new ways of cooking eggs and of serving milk make breakfast a meal to be welcomed.

Criticism of foods good for the child should be avoided. Children are quick to imitate adults' attitudes toward food, and to adopt their likes and dislikes.

Lack of Appetite for Other Meals. — Lack of appetite for lunch or supper may be due to eating between meals. The primary child has opportunity for the first time to patronize the unsanitary candy stores and pushcarts which attach themselves to school buildings.

Being indoors to a greater extent than during the pre-school period sometimes accounts for the slump in appetite of primary children. Walking at least part of the way to and from school, being outdoors the entire sunny afternoon, keeping the temperature of heated rooms down to 68° F. and at the optimum humidity, if possible, and having fresh air night and day, help to keep the appetite normal. The New York State Ventilation Committee found that decreased appetite was one of the results of poorly ventilated classrooms.

The Child Who Does Not Eat the Right Kind of Food. — In spite of advances in the newer knowledge of nutrition the number of children who are not eating the right kind and amount of food is large. It has been estimated that only eighteen in one hundred are getting as much as a pint of milk a day; that nearly two-thirds do not include either fruit, vegetables other than potatoes, or an egg, in their daily dietary. Because the effects of a faulty diet do not show at once, the problem of choice of food does not seem important to many persons.

The easiest way to supply the necessary calcium, phosphorus, and vitamins A and B is by providing a quart of whole milk a day for each child. The amount of vitamin D in cow's milk varies with the season and more especially with the available sunshine, from values as low as three U.S.P. vitamin D units to forty-four units per quart; it can be greatly increased by irradiation. This amount of milk, supplemented by a normal allowance of other foods, will furnish the necessary requirement of at least one gram of calcium per day for the growing child. Milk is also a good source of protein and energy. If an egg a day, lettuce and other green vegetables, whole-wheat bread, and some fresh fruit are added to the quart of milk, the essentials of an ade-

quate diet are practically guaranteed, in spite of the variability in vitamin and mineral content of foods at different times and places.

A simplification of menus is desirable. Although the amount of food is increased, the kinds of food in a given meal need be no more numerous than those planned for the preschool child. A suitable breakfast menu consists of:

Fruit orange, ripe banana, pear, peach, baked apple, apple-sauce, stewed dry fruit — prunes, apricots, apples, raisins, alone or combined.

Cereal three quarters to one cup of hot cereal — oatmeal, hominy, wheatina, or others. Ready-prepared cereal, such as shredded wheat, cornflakes, puffed wheat, and the like, may also be served if the child likes them better than hot cereals. A little brown sugar or chopped dates or raisins sprinkled on top or cooked in the hot cereals make them more attractive. If milk is plentiful, the cereal occasionally may be cooked in milk.

Dry toast: one or two slices, with butter or a piece or two of bacon.

An egg, if possible, especially if it is not served at other meals during the day.

A glass of milk to drink. The milk may be served hot and flavored with a half teaspoonful of cocoa, malted milk, or other harmless and nutritious flavors.

Coffee and tea should not be used because these are stimulants and healthy childhood has no need of artificial prodding.

Following the midmorning recess, undernourished children as well as others who desire it have milk and crackers or orange juice. All wash their hands, set the tables, and drink the milk, orange juice, or water. A midmorning lunch of fruit juice interferes less frequently than milk with the appetite for the noon lunch and has shown to be as effective in increasing weight.

A hot dinner at home is desirable if the child lives within ten minutes' walk of the school. It should consist of potatoes and two other vegetables, one a green vegetable, chopped

or strained, a small serving of eggs, meat, or fish; bread and butter; a glass of milk; a simple dessert of fruit, custard, junket, gelatine, rice pudding, or the like. If the child lives too far away to go home, he may bring a lunch of sandwiches made with cream cheese; egg, finely chopped; lettuce, celery, or carrot, raisin, date and nut; peanut butter, meat; also fruit, raw or stewed and put into a glass jar with a tight-fitting lid. He may bring milk in a small bottle or in the form of a custard or glass of junket or cornstarch pudding. Preferably the sandwiches and fruit brought from home should be supplemented by one hot dish made at school. This may consist of a bowl of vegetable soup, a milk soup, cocoa made with milk, macaroni and cheese, creamed potatoes, and the like, which can be provided in almost any school situation. A bulletin¹⁵ which gives detailed directions for doing this should be obtained by teachers and parents who wish to improve the noon-hour facilities in their schools.

A good supper includes baked potato and glass of milk, or macaroni and cheese, or creamed vegetables on toast, or vegetable soup with bread and butter, or milk toast, or graham bread and cottage cheese; and baked or stewed fruit, and cookie, or custard, or junket.

Some of the reasons why children do not eat the good food provided for them may be summarized as follows:

1. Illness. A sick child does not possess his normal appetite.
2. Nervousness. A high-strung, delicate child frequently has difficulty in settling down to a meal.
3. Nervous parents. An overanxious, excitable, nagging parent is of no help to children in establishing good eating habits. "Few adults would enjoy their food if they were admonished with every mouthful."
4. Quarreling, faultfinding, criticism, and threats of punishment. These conditions interfere with food intake.
5. Faulty habits of eating acquired early.
6. Suggestion and imitation. Children are quick to imitate

¹⁵ Caroline L. Hunt, *School Lunches* (revised). Farmers' Bulletin, No. 712. Washington, D. C.: Department of Agriculture.



Underwood & Underwood

CHILDREN CHOOSING THEIR OWN LUNCHES

The lunch hour is one of the best opportunities the school offers for health education. In the school shown here, the children plan their menus for the day, have them criticized in class, and then in the lunch room order the food chosen.

likes and dislikes of other members of the family and to maintain their reputation for being "finicky"

7. Eating between meals
8. Too close housing and overheating
9. Interest in other things greater than interest in eating.
10. Low economic status. Good nutrition of children is not a simple matter. It involves basic socio-economic conditions that will insure a sufficient food budget. That being provided, knowledge of what constitutes an adequate diet is necessary. Finally, there is the psychological problem of getting children to eat the essential foods provided.

Preventing Eyestrain. — A few simple precautions will do much to decrease eyestrain in the primary period. In the first place, proper lighting should be provided in the classroom and at home. Glare will be avoided if the light is placed to one side of the object rather than close to the object in the direct line of vision. Glare also may be minimized by having the surroundings of approximately the same brightness as the light on the book or other work. Indirect or semi-direct lighting most effectively eliminates glare.

In the second place, seats and desks should be adjusted so that the work may be comfortably placed at least twelve inches from the eyes, and so that the light will shine on the child's work, not in his eyes.

In the third place, the periods of time requiring short distance focusing of the eyes should be limited. This alternation in type of activity is provided automatically by the elimination of set periods for different subjects. In an activity program a child may change from one type of work to another whenever he becomes tired from too close application to one kind of task.

Prevention of Communicable Diseases of Childhood. — Measles, scarlet fever, and whooping cough are still far too common during the early elementary school years when children are thrown into close proximity to one another, sometimes for the first time. Measles begins with symptoms resembling an ordinary cold, which appear ten or twelve days after exposure to the infection. The rash becomes

visible three or four days after the initial symptoms. Scarlet fever comes on more suddenly with vomiting, fever, headache, a fiery red throat, a coated tongue, and pain in swallowing. The child is acutely ill.

Prevention of these and other communicable diseases is best insured not only by alacrity in detecting the initial symptoms and by isolating the child, but also by avoiding crowds and miscellaneous play groups when any communicable disease is prevalent.

The Health Program in an Elementary School.— Both appraisal and adjustment are interwoven in the effective health program. This may be illustrated by a brief description of the health program in one elementary school enrolling approximately two hundred and fifty pupils.

The personnel consists of one physician, one part-time assistant, and usually one or two student internes.

Each child is given a complete health examination once a year with the parent present. The parent's presence has both advantages and disadvantages. It is desirable to have the information about history of diseases and health habits which parents can give and to have the opportunity to give parents specific information and to change their attitude, if necessary, toward medical service. On the other hand, there is some danger that parents will become unduly alarmed concerning the results of the examination and transfer some of their anxiety to the child. The schedule of examinations begins with the new pupils. The results of the examination are recorded on the child's cumulative record and information passed on to persons who need it in order to make the necessary adjustments—a lightened program of work, modified physical education, a midmorning lunch, posture correction class, etc. The correction of defects and medical treatment are the responsibility of the parents. The physician reports to the psychologist any exceptional behavior, such, for example, as excessive modesty, which he has noticed.

If a child comes down with the mumps or other communicable disease, letters are sent home to every parent of chil-

dren in the class, telling what to do if the child is susceptible or if he has had the disease. Convenient cards of post-card size are printed, one for each of the common communicable diseases, giving the length of time for exposure and other information. In the event of scarlet fever the rooms are closed. Children and teachers with colds are requested to remain at home and this measure has been responsible for a reduction in the incidence of respiratory diseases.

Children who are in need of first aid go to the nurse willingly. In fact, the children have a very friendly attitude toward the medical office. A child is never sent home without first notifying the parent.

As soon as any communicable disease appears in the community, the parents are asked not to take their children to the theatre or other crowded places and to encourage them to play only with children in their school.

Perhaps most important of all is the happy atmosphere of the school which definitely promotes good posture and, without doubt, contributes to the children's general well-being.

For all practical purposes the Dick test for scarlet fever and the Schick test for diphtheria are reliable indexes of immunity. Active immunization with graded doses of toxin¹⁶ was found to be a rapid and effective protection against scarlet fever for the majority of susceptible persons. Children who have been exposed to measles may also be safeguarded.¹⁷

These so-called *children's diseases* should be prevented if possible, because of the complications and the large number of deaths resulting from them.

EMOTIONAL PROBLEMS IN THE PRIMARY PERIOD

Fear.—What causes some children to be afraid in school? The first days of school frequently call forth this reaction in

¹⁶ W. T. Benson, "The Dick Test—An Active Immunization against Scarlet Fever," *Lancet*, I (February 5, 1927), 281-283.

¹⁷ Joseph N. Brennemann (Editor), *Practice of Pediatrics*, Vol. I. Hagerstown, Md. W. F. Prior Co., Inc., 1937.

the case of the spoiled, or shy, or too-dependent child. The strangeness of the room, the teacher, and the children, and the absence of the mother combine to make such a child afraid. Later, a difficult lesson, an impending examination, a threat of punishment may cause fear of failure and of the disapproval which may result. Excessive crying during these years may be due to lack of ability to profit readily by experience.

On the other hand, previous training may be the cause of a six-year-old's putting her head on the desk and crying continuously the first few days of school. Parents may have been over-solicitous. The clinical records of a small group of withdrawing children were compared with a somewhat comparative group of children who did not show withdrawing tendencies.¹⁸ The following factors pertaining to the homes and the child seem to be associated with shyness: broken home with child placed out, poor health or history of poor health, being the older of two children in a family; both parents nonsocial; one or both parents nonsocial, neurotic, psychotic, or immoral. The wrong associations may have been built around the child's ideas of school and teacher — school — a place where children do not like to go; teacher — someone who will whip you if you are naughty and do not learn your lessons; school children — children who will tease you or hurt you. Frequently these ideas constitute a child's conception of school instead of the desirable associations: school — a place where you learn to read stories, play games with other children, and see and hear new and interesting things. The obvious treatment of fear due to wrong first impressions is to require the persons who have been responsible for the wrong associations to retract their statements, and patiently to associate school with pleasurable experiences.

Work that the timid child is able to do and is interested in should be offered to him. Doing something successfully is a pleasant experience. Success in school activities is one

¹⁸ Nina A. Ridenour, "A Study of the Backgrounds of Withdrawing Children," *The Journal of Educational Research*, XXVIII (October, 1934), 132-143.

of the best ways of changing children's attitudes toward school and driving out fear.

Since excessive and persistent timidity may often be traced to poor physical condition of the child and a heightened sensibility to experiences, attention should be given to providing a healthful school program and to co-operating with the parents regarding the food, sleep, and other health habits the formation of which must necessarily be carried on at home.

Excessive timidity may be the result of brutal treatment at home. In this case the child can be led to see that his fears of punishment, which at home are well-grounded, have no similar foundation in school.

Our knowledge of how fears are acquired suggests the following steps in dealing with any irrational fears:

1. The detection and correction of physical causes
2. The discovery of the specific causes of a given fear response.
3. The prevention of recurrences of the fear-provoking stimulus or, better still, the systematic attempt to obtain mastery of the situation which at one time called forth fear.
4. Most effective of all is the method of helping the child to take an active part in controlling the elements in the fear situation. Knowledge and skill in meeting a situation casts out fear.

In the case of rational fears the cause usually is obvious and unavoidable. A serious accident, a severe thunderstorm, a fire in the school building, being inoculated for typhoid fever or diphtheria may be unavoidable causes of fear. The first requisite in the control of these fears is that everyone must know exactly what to do in the emergency. If an accident occurs, first-aid materials should be ready for use by one or two persons who have been trained to use them. The others should go on with their own work away from the injured person. Starting the children on some interesting work is a good means of relieving their tension and fear. To be prepared in the case of fire, the method of leaving the building must be thoroughly learned. When everything has

been done that is possible, the attitude of courage in the face of danger and inevitable pain must be built. Younger children imitate the attitude of those about them. It is important that the teacher maintain a calm, unemotional attitude. Fear is infectious. The attitudes of older children may be influenced by stories of bravery. The surest way of building a courageous character is to take an active part in controlling the situation and to form the habit of accepting inevitable bumps and scratches and disappointments with fortitude.

Anger. — Temper tantrums are common among young children. When their anger is aroused, they are likely to throw things, kick, bite, or scream. Parents give in to temper tantrums because "they just can't stand the noise and contention," the child disturbs the neighbors, or they fear the child will harm himself.

A group of primary teachers listed the following specific situations which, in their experience, had made primary children angry:

- A. 'Stimuli to anger which should have been avoided by the teacher.
 - 1. Making a promise to a child and not keeping it.
 - 2. Seizing hold of a child.
 - 3. Becoming angry herself.
 - 4. Having no regular schedule through which the child may know when to expect a change in activity.
 - 5. Interfering with a child's activity when he is interested and able to carry it on by himself.
 - 6. Giving a child work that is beyond his capacity, with the result that he is constantly failing in it.
- B. Stimuli to anger which cannot be avoided entirely by the teacher. The child's attitude toward the situation, however, may be changed. His skill in dealing with the situation constructively can be increased.
 - 1. One child does better work than another child.
 - 2. One child is chosen to be "it" in a game. The child not chosen becomes angry.
 - 3. A child interrupting the class work is reprimanded.
 - 4. A child loses in a game.

5. A child wants to play a game which the majority of children do not want to play.
 6. A child wants something that belongs to someone else.
 7. A child is not permitted to read because there is not time enough for everyone to take part.
 8. One child teases another child.
- C. Some stimuli to anger which are due to influences outside of school.
1. Parents fail to control their anger, they have emotional outbursts in the child's presence.
 2. The child's environment is one which furnishes constant thwartings and irritation, such as nagging or unreasonably severe discipline
 3. The child has found that he can get what he wants by flying into a rage.
 4. The child is suffering from some physical irritation or from malnutrition or fatigue which makes him easily provoked.
 5. The child has inherited an unstable nervous system and consequently disappointments and annoyances which others would hardly notice, result in violent outbursts of temper in his case
 6. An attitude of suspicion has been built which causes the child to go about with "a chip on his shoulder" most of the time.
 7. The child is deprived of affection and is contrasted unfavorably with his siblings.

The kind of treatment naturally depends on the cause. Attention to the child's physical condition is always a wise first step. Unnecessary provocations to anger should be avoided.

Anger at not being "it" and at not being singled out for certain privileges, such as a chance to read to the class, may often be prevented by posting several days in advance the names of those who will take part in certain activities. The children will note when their names appear and look forward to the opportunity coming in the near future. The child who becomes angry when he is excelled in some activity by another child, may be interested in competing with his

own past record The child who becomes angry or sullen when his conduct is criticized should be shown how social approval may be won by acting in a different way. A child who becomes angry when he cannot have something that belongs to another person, should be re-educated in his sense of ownership.

Diverting the attention is worth trying, especially with young children. With an older child active exercise in the form of a game he enjoys, a race upstairs, carpentry work, or some special commission takes the mind away from the cause of the injury. It keeps him from brooding and picturing himself as a "suffering hero," uses some of the energy released by the emotion, and demonstrates to the child a method of gaining self-control. Helping the child to see a funny side in the situation also is a constructive method of dealing with a tense situation. After the anger has subsided, the child may be reasoned with to some extent, made to see the "other fellow's" point of view, and interested in the person who annoyed him.

If the habit of becoming angry in order to get what he wants has become established, firm and consistent treatment is necessary. The child should be told calmly that he is annoying the rest of the class and that if he wants to act in that way he must go by himself. He should be left alone until he becomes calm. No one should pay attention to him nor should he gain anything by losing his temper. This treatment may have to be repeated frequently, but the method of always attaching dissatisfaction to undesirable responses is sound and should be used persistently. At the same time he should be helped to gain the approved satisfactions possible in the situation.

Finally it is important that the teacher who is face to face with an angry child should herself keep calm and impersonal. She should avoid any appearance of alarm. Nor is a "rest cure" the solution. In no way should the child obtain the idea that he is suffering from a disease.

On the preventive side proper school and recreational opportunities should be provided, and a chance to acquire

essential skills and to talk over the problem with an understanding person

Love — Should a child love his teacher? Yes, if by *love* is meant the kind of liking and admiration one gives to a born leader. No, if by *love* is meant an intense personal affection between teacher and child. A teacher's strong affection for one child is likely to interfere with her judgment of the child's behavior, and to lead to favoritism, a type of injustice children keenly resent. An intense desire to please the teacher may result in a temporary spurt which is usually followed by a slump. It interferes with efficiency in the long run. The internal changes that accompany strong emotions are destructive rather than constructive. They use up rather than build up reserves of energy. Furthermore the child may become oversensitive to the teacher's opinion, and feel hurt when she fails to give the expected attention or praise.

Admiration and respect for the teacher are an immense aid in the formation of good habits in this period. Antagonism and conflict between teacher and child result in a negative attitude on the part of the child to even the most reasonable and necessary requests. A child frequently obeys the request of a person whom he genuinely likes and refuses to obey the same request if given by a person whom he dislikes.

On the other hand, a child who is all bound up in his teacher finds adjustments to a new teacher very difficult, and has not gained interests and motives which are independent of a single personality. The motive of pleasing the teacher is not one that is permanently useful. It fails to function when a new teacher comes, or when the child's attitude toward the former teacher changes. As soon as possible, the motive for good work should be one that is inherent in the work itself, and the motive for desirable social behavior, the satisfaction the child himself feels in such behavior. Is this aim too idealistic for the primary period?

The teacher must be sensitive to the diverse emotional needs of each child. Some children need affection more

than anything else. Others need to acquire a less antagonistic attitude toward authority, still others should be helped to become more independent.

As in the preschool period, sex curiosity should be satisfied with a frankness and lack of tension that will cause children to attach no feeling of excitement or suppression to the question. Pets at school and at home frequently give an understanding of the way life begins.

Masturbation frequently is a problem. It is prevalent among adults. Approximately two-thirds of a large number of college men and over one-half of the women in groups which answered questionnaires on the subject admitted the practice. Even when carried into adult life masturbation is not a cause of mental disorder. Nevertheless, because of the individual's attitude toward the act, it may be a precipitating cause of feelings of inferiority and withdrawing behavior.

The child should be told not to play with himself in the same matter-of-fact tone of voice in which he is told not to put dirty fingers in his mouth. Nothing should be done to fix attention on the habit or attach emotional excitement to it. Provision for plenty of active outdoor play and interesting work is most important. Sometimes failure in school work induces the child to seek satisfaction in other ways. The reason for failure should be discovered, and means found for preventing a continuation of scholastic difficulties. This does not mean that children should not occasionally meet failure and face it squarely, recognizing that the task was one they could not master, or finding out why they failed. But work that is always beyond the child's power leads him to give up trying, to daydream, to interfere with other children, or to amuse himself in some secret way. Lying awake in bed should be discouraged and local irritation removed.

Taking Responsibility.—Independence can be encouraged by giving opportunity to wander about in the neighborhood, to go on errands, to go to school alone. This freedom gives the child a sense of direction and distance and

is a step in that more complete emancipation from the family which should take place in adolescence. In many situations the child should be encouraged to take the initiative. Parents and teachers should not assume responsibility for a child's acts long after he is able to do it himself. The sooner he does things "on his own," the sooner he becomes dissatisfied with procrastination which Don Marquis has defined as "the art of keeping up with yesterday."

QUESTIONS AND PROBLEMS

1. To what book would you go for help in diagnosing and treating special reading difficulties in these grades?
2. How would you prevent and treat fears in primary children?
3. How would you prevent and deal with outbursts of anger?
4. Name some stimuli to anger which may be avoided in the primary grades.
5. Visit a number of classrooms and study the teachers' attitude toward the children.
6. Can stuttering be cured? Describe an approved method of dealing with a child who stutters.
7. What attitude should you take toward the punishment of primary children?
8. To what book would you go for information on a child's diet?
9. In what book would you find a helpful treatment of sub-normal children?
10. Keep in detail a record of the treatment and the results of the treatment of some problem of an individual child.
11. Give illustrations of the complexity of problems found in individual children.
12. Plan a meal for a seven-year-old child which is satisfactory in every respect—the kind and amount of food, the way it is cooked and served, the appearance of the dining room, the attitude of the other members of the family toward the food and toward the child, the activity of the child before, during, and after the meal, and the time allowed.
13. Make a study of the way in which certain individuals have acquired food prejudices.
14. Describe the characteristics of some "nervous" child whom you know. Try to discover the causes of his "nervousness," visiting him in his home, if possible, on several occasions.
15. Study several "problem" or abnormal children in co-operation with a school or child guidance clinic.

16. What undesirable effects may an intense emotional relationship between teacher and child have?

17. Have the children in your class keep a simple record of their daily activities from the time they get up in the morning to the time they go to bed at night. Then discuss with the children and their parents desirable changes in the daily routine. Compare the daily schedules of the ten healthiest, well-adjusted children with the schedules of the ten most unhealthy and poorly-adjusted children in the group.

18. Discuss the possible danger of over-standardization of a child's day.

19. Make plans for providing an adequate noon lunch for school children in your community, if no satisfactory provision has yet been made.

20. Plan adequate menus for primary children, suitable to different seasons and to different economic and social conditions.

21. How can a parent satisfy the child's sense of adventure and at the same time maintain a healthful routine?

22. Become acquainted with a so-called "naughty" child. Get him to do some interesting thing with you, such as going to a zoo or making a gift for someone he likes. Afterwards write a brief description of his co-operation with you, adding some suggestions by which other adults dealing with him might profit.

CHAPTER XVII

STUDYING PRIMARY CHILDREN

Teachers and administrators should recognize the fact that studying children is an essential part of their tasks. It is not an "extra." Professor Morrison's significant statement has been widely quoted: "The teacher should spend half his time in studying pupils as individuals and the other half of the time doing what that study shows to be desirable and necessary." Teaching inevitably shoots wide of the mark unless it is based on the individual appraisal of the pupils.

Every first-grade teacher should devote most of his time during the first few weeks of school in "learning" his pupils — learning their present level of preparation for first-grade work, their mental ability, their physical needs, their interests, and their unique personalities. One of the most encouraging features in the modern school is the tendency for classroom teachers to develop and use better methods and technics of studying children and evaluating their development.

METHODS OF CHILD STUDY

Each child should be studied from the clinical point of view, for development is a complex process. Each child should likewise be studied genetically, for development is a continuous process.

Certain aspects of this appraisal are highly technical and capable of being administered only by specialists. But there are other valuable diagnostic procedures which the teacher is well qualified to use. Among these are (1) observation of a pupil at work in natural classroom conditions, (2) systematic analysis of the pupil's written and oral responses, (3) interviews with pupils and parents, (4) the use of objec-

tive and analytical diagnostic devices, and (5) classroom adaptations of laboratory methods of investigation.¹

By combining these methods of study the teacher may find out a great deal about the intellectual, biological, and temperamental endowments of the individual. He may also discover the environmental and educational conditions which give a particular personality the best chance to develop.

Observation. — The technique of observation has already been discussed at some length on pages 141–144 and 264–268. The first problem is to select the most significant behavior to observe. First of all any teacher can observe the general impression which the child makes on him. This is important because the child may be helped to correct certain mannerisms and personal habits that are causing other persons to respond unfavorably to him.

The special abilities that should be studied are: constructive and manual ability, understanding of number and forms, verbal fluency, memory of different kinds, understanding of common concepts, imagination, ability to see relationships, attention and power of concentration, speed in thinking and understanding, and last, but far from least, ability to get along with other children and live comfortably with both children and adults. How he reacts to adults, to other children, to difficulty, what his interests are, and what things give him satisfaction are important to observe.

The following specific habits may be observed informally in the course of the school day:

1. How does the child behave toward strangers?

Does he, of his own accord, engage in conversation with them?

Does he respond when they speak to him?

Does he respond only when they smile and invite him to join them?

Does he respond only when he is urged to join them?

¹L. J. Bruckner, "Techniques of Diagnosis," *Yearbook, National Society for the Study of Education*, XXXIV (1935), 131–153.

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- Does he fail to respond to any advances that are made, keep by himself, or stubbornly refuse to join in any activity?
2. How does he behave when work is assigned to him?
- Does he begin eagerly and work steadily at the task, mastering the difficulties as he meets them?
- Does he soon become tired of trying to do it alone and come to the teacher for help?
- Does he fail to finish the job even when shown how to do it?
- Does he say "I can't do it" before trying?
3. How does he behave when he has made a mistake?
- Does he acknowledge that it was his fault and ask how he can correct it or prevent it from occurring again?
- Does he blame the mistake on something or someone else?
- Does he say, "Oh, it doesn't matter. Mary made a mistake, too?"
- Does he sit quietly doing nothing?
- Does he cry when criticized?
4. How does he behave in free play with a group of children?
- Is he quarrelsome?
- Does he play roughly — pushing, tripping, and kicking?
- Is he selfish — always wanting to be "it," wanting to play what he likes best, picking out the best equipment for himself, unwilling to take turns?
- Is he at ease in the group?
- Is he considerate of the rights and feelings of others?
- Is he kind to children or animals who are in trouble?
5. How does he behave in class discussion?
- Is he conceited, always wanting to perform, and thinking what he does is admirable?
- Is he self-confident and ready to contribute to the class discussion when occasion offers?
- Can he express his ideas orally?
- Is he timid, never volunteering to speak or take part unless directly called on?
6. How does he behave in study periods?
- Does he waste time moving around or looking around?
- Does he bother other children?
- If you "give him an inch will he take a mile?" i.e., abuse privileges?
- Does he find something profitable to do when the teacher is too busy to suggest new work?

7. How does he behave in other school situations?
 - Is he truthful?
 - Does he do what he promises to do?
 - Does he come to school on time?
 - Is he prompt in being ready for work or play at different periods of the day?
 - Does he obey the rules of the school?
- 8 Has he any noticeably bad habits?
 - Does he suck his thumb?
 - Does he bite his nails?
 - Is he unusually shy or sensitive?
 - Does he jerk or twitch in any part of his body?
 - Does he have temper tantrums?
 - Is he very much afraid of certain things?
 - Does he insistently refuse to do certain things?
 - Does he masturbate?
 - Does he sit idly, apparently daydreaming?
 - What other bad habits has he?
9. Has he some unusually good habits?
 - Does he persevere in spite of difficulties in a superior way?
 - Is he habitually cheerful and good-natured?
 - Does he accept responsibility? Can he usually be depended upon?
 - Does he clean his teeth, bathe, and dress himself?
 - Does he put his toys and clothes in their proper places when he has finished using them?
 - Does he perform home duties: straighten the living room, bring in the newspaper, answer the door bell, run errands, take care of pets, sweep the sidewalk, set the table, help wait on the table, wash or dry dishes, prepare vegetables and fruit, help clean the kitchen, make his own bed, keep own room neat?
 - Does he spend his allowance wisely?
 - Does he contribute to the entertainment of the family?
 - Does he entertain friends graciously?

Information of this kind about each child can be recorded as it is observed during the year. A file of 6" x 4" cards for the children in the class arranged alphabetically is a convenient way of keeping records. When the teacher has observed something of interest about Mary, she can reach

for Mary's card and jot down the date and observation. In this way knowledge of each child accumulates; progress in a certain type of behavior becomes evident, the teacher's interest in the child as a personality increases, and the specific places where a child needs guidance become more evident.

The brief anecdotal record lends itself admirably to the study of child behavior. To be of greatest value anecdotes should be selective, recording the behavior most significant for child development. Too often teachers describe trivial incidents or negative behavior, or dramatic events which may not be particularly significant or typical. The record should report concretely what actually happened or was said, and the interpretation should be kept separate from the statement of fact.

The teacher has an excellent opportunity to study the social development of children. With the co-operation of research workers teachers could build up a significant body of information in this relatively neglected area of child development. Methods of study similar to those which have been used by Murphy, Koch, Jack,² and others in the pre-school field should be applied to the study of school children.

The teacher can obtain information about a child's family background and previous history from visits to the home, conversation with the child and with the parent, older brother, or sister who brings him to school. Under existing conditions most classroom teachers have no time to visit the homes of the forty or more children in their classes, but special visiting teachers can render great service to individual pupils. The ratio of visiting teachers to pupils who need the services of a social case worker is at present extremely inadequate compared to the need.

The most important outcome of the first visit to a given home is a friendly relationship between parents, child, and teacher. Once this relationship is established, information of the following kind may be obtained.

² See pages 229-230

What language is spoken at home?

What is the relation of the parents to each other and to the children?

How many older brothers and sisters, younger brothers and sisters has the child? What is his relation to them?

What is the occupation of the father? Of the mother?

Has the child any famous relatives? Any feeble-minded or insane relatives?

Who are the child's companions?

At what age did the child learn to walk? To talk?

Can he dress himself?

Does he cry when his mother leaves him?

Has he had any unusual experiences that may have affected his present mental or physical condition?

What is his typical daily schedule?

What does he do in his leisure time?

What activities does he especially like?

What activities does he especially dislike?

Analysis of Pupil's Written and Oral Responses. — Everything that a pupil writes, or says, or makes is potential child study material. It is a permanent record of accomplishment at certain points in the child's development. An analysis of samples of his writing, spelling, composition, arithmetic, drawing, and other kinds of work at the beginning and at the end of the year will show progress in writing, vocabulary, sentence structure, clarity of expression, general information, computation, and creative expression. Cues that will supply an understanding of a child's emotional maladjustments may be obtained by observing his dramatic play, letting him construct something of his own accord, tell an original story or narrate a dream, or respond to some standardized stimulus, such as a series of pictures, or the Rorschach ink blots.

Interviews. — An interview is not an oral questionnaire. It is a conversation with a purpose, mutually satisfying to the two persons concerned. *Interview*, as usually defined, is perhaps too formal a term to be applied to the frequent, casual conversations with individual children that reveal so much about their interests, verbal ability, attitudes, and the way their minds work. Talking with parents and observing

them with their children also reveal parent-child relationships, methods of discipline employed in the home, and attitudes toward school. During the primary years, when parents or older children frequently bring the little ones to school, the teacher has more opportunity to co-operate with parents in the development of the children than during the later school years.

Use of Objective and Analytical Devices. — Among the important instruments for studying primary children are those which measure the family background and developmental history, mental ability, and achievement.

Among the most widely used measures of socio-economic status is the Sims' ³ score card. It is intended for use with pupils of grades four to twelve inclusive. Each question, such as "Have you a telephone in your home?" is carefully explained to the pupils who then write the answer on their blanks. To administer the scale requires about twenty to twenty-five minutes. Its validity today is somewhat influenced by changes that have occurred in the social significance of the items since the scale was validated. Thus, to have a telephone or a bathroom does not have the same social significance today that it did ten or twenty years ago.

A knowledge of the home is necessary in order that the three to five hours a day which the child spends in school may be used to best advantage. For example, a child from a cultured home needs different experiences in school from a child of foreign-born parents or one brought up in an orphan asylum. If there is a summer roundup of children entering school in the fall, the teacher at that time may find opportunity to establish a friendly relationship with the mother and to obtain information about the members of the child's family, the social, economic, and cultural status of the family, the past history of the child, and, most important of all, the parents' attitude toward him. During the physical examination further information about the child's present condition may be obtained. Daily observation in the free

³ Verner M. Sims, *Sims Score Card for Socio Economic Status*. Bloomington, Illinois. Public School Publishing Company, 1927.

atmosphere of the modern school yields information about his interests, achievement, and habitual ways of acting, speaking, and feeling. Such significant information should be recorded in a permanent form. Thus, it will be an aid to other teachers in understanding the child when he comes to them.⁴

A rating scale for the clinical study of children has been published by Baker and Traphagen.⁵ It consists of a case record blank of sixty-six items each of which is to be rated on a five-point scale. Questions and suggestions for observation given in connection with each item aid the teacher in directing his observation toward significant points. The five items which were found to distinguish "normal" from behavior problem groups were: (1) general behavior, (2) child's attitude toward school, (3) discipline, (4) personality type, and (5) pity, sympathy, and enthusiasm.

There have been various character analysis charts which, like the scales already mentioned, direct the observer's attention toward certain kinds of behavior. Their value depends, first, upon the significance for character development of the items selected and, second, upon the conditions under which the observations are made. It is important that the conditions are favorable for observation and that the observer himself is skilled. Some of the habit inventories permit self-rating. These are of doubtful value in the study of primary children whose judgment of their own acts cannot be expected to be reliable. A great variety of scales exists in this category of tests, questionnaires, and rating scales which measure interests, attitudes, and other personality traits.

In studying the intelligence of children a combination of observation, individual testing, and group testing may be used. The verbal ability of children, as shown in their daily conversation, their questions, their facility in seeing relationships, and their quickness in comprehending an explanation or directions, give indications of their intelligence. Standard-

⁴ See page 269 for precautions in interpreting records.

⁵ Harry J. Baker and Virginia Traphagen, *The Diagnosis and Treatment of Behavior-Problem Children*. New York: The Macmillan Company, 1935.

ized tests are not a substitute for day-by-day informal study and guidance of children

As a check on this impressionistic information the individual intelligence test is valuable. The Stanford-Binet test has been the test most widely used in clinics and the new revision⁶ should be equally valuable.

Performance tests are useful for children who have a reading or language handicap. The directions for these tests are given in pantomime or orally and many of the responses are oral. It is not likely, however, that the performance tests measure the same kind of intellectual ability as do the tests of abstract verbal ability. The latter would naturally be more closely related to traditional school work.

Discrepancies between the results on certain performance tests and on three of the Binet tests — Reading and Recall, Digits Backwards, and Memory for Designs — have been found to be associated with behavior disorders. Children who were recognized as serious behavior problems by their teachers and principals obtained relatively poorer scores on the performance test than on the vocabulary test. The better the children's behavior rating, the higher was the correlation between vocabulary and performance scores.⁷ Thus, two types of intelligence tests, in the hands of a clinical psychologist, may prove to be a better measure of adjustment than questionnaires which attempt to measure it directly.

The Porteus Maze Test stands second in frequency in clinical use. This test is said to measure certain aspects of prudence, forethought, and power of sustained attention which the Binet test does not attempt to examine. The Pintner-Paterson Performance Test appears to favor the dull children and to penalize the gifted. As a result the nonacademic pupil may score ten or more points on the Pintner-Paterson test above his Binet score whereas the child with high verbal ability may make a poor showing. The Arthur Performance Scale and Greene's Michigan Non-

⁶ Published by Houghton Mifflin Company, Boston

⁷ J. Jastak, *Variabilities of Psychometric Performances in Mental Diagnosis*, New York: Teachers College, Columbia University, 1932

Verbal test have been recommended for use in elementary grades. A revision of the Army Beta test is recommended by the Psychological Corporation, New York City, for use with children above the fourth grade.

Vernon⁸ has analyzed the tests given in a certain London child guidance clinic. It has been his purpose to detect some of the main inadequacies and characteristics of these tests in clinical practice. For primary grade children he found the Mare and Foal form board test a useful supplement to the Binet test. The Healy Picture Completion Test II appeared to vary more than any other test with emotional maladjustment. The intelligence quotients derived from it were, on the average, fifteen points lower than Binet I Q.'s. Inadequate standardization appeared to limit the value of the Porteus Maze Test in revealing both intellectual and temperamental differences. Anyone interested in the clinical use of tests should carefully read Vernon's article from which only a few details have been presented here.

These tests need expert interpretation and follow-up if they are to be more than mere busy work to fill the files. The examiner should note such items as retarded associations and slowness in learning accompanied by accuracy when sufficient time is allowed; quick but superficial associations accompanied by difficulty in grasping abstractions; poor performance in both learning and motor tests; facile and adequate mental functioning in simple situations, but inability to comprehend at more difficult levels of achievement. The experience background of a child should likewise be taken into account in the interpretation of test results. For example, a child with deficient schooling would be handicapped in taking the Otis, National, and Haggerty intelligence tests, all of which emphasize the three R's, speed, and school achievement. In the individual testing situation the examiner has an excellent opportunity to study a variety of factors which may affect a child's score. An understanding

⁸ P. E. Vernon, "A Study of the Norms and the Validity of Certain Mental Tests at a Child Guidance Clinic, Parts I and II," *The British Journal of Educational Psychology*, VII (February and June, 1937), 72-88 and 115-137.

of the specific nature of a child's mental ability and of the role of other factors in his personality, in his reactions to the testing situation and to his everyday environment is essential to a precise treatment of his particular deficiencies.

Tests should be repeated at intervals during the child's educational journey in order to obtain a cumulative picture of his probable mental ability. In general, the results of a single test can be recognized as indicating the presence, but not necessarily the absence, of the trait tested. The results of a single intelligence test should be regarded in much the same way as the results of an arithmetic test — as a sampling, and not as a final judgment of the child's ability.

Mental age is an index of the individual's brightness. As a concept it is useful. Parents and teachers should think in terms of the mental tasks children of different ages can perform. It is not so useful, however, to refer to retardation in terms of the number of years, because a retardation of two years at six years of age is much more serious than a retardation of two years at sixteen.

The intelligence quotient is a ratio of mental age to chronological age. It is the most commonly used measure of relative brightness, but presents a number of difficulties.

Children between 70 and 80 I.Q. (that is, about the lowest 5 or 6 per cent of the total school population) tend to drop out of school as soon as the law allows. If they manage to struggle along after school-leaving age they are usually one to four grades retarded in schools maintaining a uniform standard of achievement. The dull-normal children having I.Q.'s between 75 and 90 present a problem in schools which do not recognize and make provisions for their needs and abilities. In the typical school they frequently command a proportionally large amount of the teacher's time resulting in a corresponding neglect of the brighter children. The ability of children of superior intelligence is too seldom recognized. They are not encouraged to do work equal to their capacity, and so they acquire habits of idleness or get into mischief. The teacher should not neglect the bright children in her effort to give special help to the dull ones.

TABLE III
GROUP INTELLIGENCE TESTS FOR PRIMARY GRADES

NAME OF TEST	GRADES	WHERE IT MAY BE PURCHASED	COST
California Test of Mental Maturity, Primary Battery	Grades I-III	Southern California School Book Depository, Ltd., 3636 Beverly Boulevard, Los Angeles, California	\$1 25 per pkg of 25 tests and manual
Detroit First Grade Intelligence Test	Kindergarten, Grade I	World Book Co., Yonkers, N Y	25 examination booklets plus manual of directions, key, and one class record, \$1 10 net
Detroit Primary Intelligence Test, Form C and D	Grades II-IV	Public School Publishing Co., Bloomington, Ill	\$3 00 per 100 copies Sample set, 15¢
Haggerty Intelligence Examination, Delta I	Grades I-III	World Book Co., Yonkers, N Y	25 examination booklets, key, and one class record, \$1 25 net
Kuhlmann-Anderson Tests	1B, 1A, 2, 3, 4, 5, 6, 7-8, 9-12	Educational Test Bureau, Inc., Minneapolis, Minn Also in Philadelphia and Nashville	\$1 25 per 25, 40¢ per specimen set, manual, 30¢
Pintner-Cunningham Primary Mental Test	Kindergarten, Grades I and II	World Book Co., Yonkers, N Y	25 examination booklets, including one manual of directions and key, and one class record, \$1 25 net

Children testing above 140 I.Q. are not common, the ratio being about one child in two hundred and forty.

Group Intelligence Tests — If the Binet testing material is not available, or a skilled person to give it is not at hand, one, or better two, of the group intelligence tests may serve a useful purpose. Their advantages are that an entire class may take these tests at one time, and also that clear and definite directions for scoring and for interpreting the results are given with each test. Some of the intelligence tests suitable for the primary grades are listed in Table III.

More attention should be given to the selection and training of persons who will give group tests. Many teachers who may be qualified in respect to ability to gain the interest and co-operation of normal children still need to be impressed with the importance of following directions precisely and of temporarily putting aside some of their pedagogical preconceptions. They should also be aware of the fact that delinquents and children with behavior problems are likely to be unco-operative and that their scores on the group test may yield very inadequate information about their mental status.

STUDYING THE ACHIEVEMENT OF CHILDREN

Informal Tests of Achievement Compared with Standard Tests. — Teachers have always tested the achievement of their pupils. Standardized tests are essentially a carefully thought-out and tried-out kind of ordinary examination. A teacher has at the most one or two hours to spend in making an examination. In making the Stanford Achievement Test, on the other hand, four to eight persons spent most of their time for ten months. It cost more than \$4,500. Standardized tests are useful to supplement the informal type of test that the teacher makes for her own group.

Some Informal Test Questions for Beginners. — In the ordinary routine of the first few days of school the teacher, in connection with the ongoing activities of the school, can find out some of the skills which each child already possesses:

Can he write his first name? His last name?

Can he write any numbers?

Can he do problems such as:

If you had two rolls for your lunch and someone gave you two more rolls how many would you have?

How many are 4 and 4? 2 and 3? 3 and 4?

Give me $\frac{1}{2}$ of this piece of string

Give me a $\frac{1}{4}$ of this piece of string.

If you had four pencils and gave three pencils away, how many would you then have?

What time is it now?

Here are ten cents. How many two-cent stamps can you buy?

Here are five cents. Buy me a cookie for two cents. How many cents will you have left?

Does he know his address? His age? Date of his birth?

How far can he count forward? Backward? By two's?

Can he read words? Phrases? Sentences? Stories?

Does he know any letters of the alphabet?

Has he any speech defect?

Can he tell in an interesting, grammatical way some experience he has had?

What grammatical errors does he frequently make?

Standardized Achievement and Diagnostic Tests. — In the primary grades standardized achievement tests of all kinds are, in a sense, readiness tests. They sample a child's proficiency in reading, arithmetic, and other subjects. By knowing more accurately the general preparation of the class and the background of individual children, the teacher can provide more appropriate experiences for their further growth.

In addition to revealing the knowledge and skill on which a child can build, the tests listed in Table IV have a diagnostic value. They suggest strengths and weaknesses and specific causes of low achievement. Even a test that does not purport to analyze a pupil's achievement may furnish some diagnostic opportunities if the child's responses are studied and if the process which he followed to obtain a given result is reviewed with him.

Tests likewise have motivating value. They raise ques-

TABLE IV
ACHIEVEMENT TESTS FOR PRIMARY GRADES

NAME OF TEST	GRADES	WHERE PUBLISHED	COST
Brueckner Curriculum Tests in Arithmetic Processes	3-8	J C Winston Co., Philadelphia, Pa	Booklet for each grade, 5 cents
Detroit Word Recognition Test, Forms A, B, C, and D	1B to 2A	World Book Co., Yonkers, N Y	25 test booklets, manual of directions and class record, \$0.75 net
Diagnostic Tests and Practice Exercises in Arithmetic, by Brueckner, Anderson, Banting, Merton	3-8	J C Winston Co., Philadelphia, Pa	Set of six books, 32 cents
Gates Primary Reading Test, Form I, Types 1, 2, and 3	1-2	Bureau of Publications, Teachers College, Columbia University, New York City	100 test booklets, \$2.10, manual, 15 cents
Gates Silent Reading Test, Form I, Types A, B, C, and D	3-4	Bureau of Publications, Teachers College, Columbia University, New York City	100 test booklets, \$2.10, manual, 15 cents
Gray Standardized Oral Reading Check Tests	1-2 2-4 4-7 6-8	Public School Publishing Company, Bloomington, Ill.	Pads of 100 tests, 20 each of five tests of check test set, \$1.50 net
Haggerty Reading Examination, Sigma I, One Form	1-3	World Book Co., Yonkers, N Y	25 booklets with manual, key, and class record, \$1.00 net
Hildreth Arithmetic Achievement Tests, Form I	2-6	Bureau of Publications, Teachers College, Columbia University, New York City	100 tests with manual and key, \$4.20

TABLE IV (continued)

NAME OF TEST	GRADES	WHERE PUBLISHED	COST
Iowa Every-Pupil Tests of Basic Skills, Tests A, B, C, D 1936 and 1937 Edition	5-8	State University of Iowa Bureau of Educational Research, Iowa City, Iowa	1936 Edition Sample set \$0 20 1937 Edition set complete \$0 25, In lots of more than 250, \$0 16 each
Metropolitan Readiness Tests, Form A	Kindergarten to 1	World Book Co., Yonkers, N. Y.	25 booklets, manual of directions, key and class record, \$1 20
Metropolitan Achievement Tests, Forms A, B, and C (also available in New York City edition) Primary I Battery Primary II Battery	1 2-3	World Book Co., Yonkers, N. Y.	25 booklets, directions for administering, key, class record, and class analysis chart, \$1 15 net 25 booklets, directions for administering, key, class record, and class analysis chart, \$1 25 net
Modern School Achievement Tests, Forms I and II, also short form Skill subjects, Forms I and II	2-8	Bureau of Publications, Teachers College, Columbia University, New York City	Complete battery 100 test booklets, \$7 55 Short form- 100 test booklets, \$5 25 Directions, answer keys supplied with order
New Stanford Achievement Test, Primary Examination, Forms V, W, X, Y, Z	2-3	World Book Co., Yonkers, N. Y.	Package of 25 examination booklets including key, directions for administering, class record, and class analysis chart, \$1 10 net
Progressive Achievement Tests (Revised) Forms A, B, and C	1-3	Southern California School Book Depository, 3636 Beverly Boulevard, Los Angeles, Calif.	Primary battery, \$1.00
Sangren - Woody Reading Test, Forms A and B	3-8	World Book Co., Yonkers, N. Y.	Booklet, 5 cents

tions in the child's mind and thus pave the way for more effective learning. For example, after a health test was given, the teacher was besieged with eager questions. "What are vitamins?" "Does spinach have lots of iron in it?" "How often should a third-grade child eat meat?" The questions were written on the board and formed the basis for several periods of discussion.

The value of standardized tests in placing a child with respect to other children of the same age and grade has been overemphasized in the past. Nevertheless, comparisons cannot be avoided in this present imperfect educational world, and it is frequently necessary, in making educational and vocational plans, to have some idea of an individual's achievement in relation to that of his fellows.

The results of a battery of achievement tests, when recorded in the graphic form suggested by Mort,⁹ show at a glance whether the child is uniformly high or low in all subjects, or whether he is uneven in his achievement, being high in some subjects and low in others.

In these ways standardized tests supplement the teacher's informal tests and observation. Although the modern school curriculum emphasizes the acquisition of firsthand experiences before the more formal type of learning, the use of drill in the tool subjects in response to a felt need, and the reduction of the required skills to minimum essentials, nevertheless a substantial amount of learning takes place in the primary grades. Knowledge of the progress that individual children are making is important for both children and teacher.

The policy of progressive schools with respect to testing in the elementary school is, in general, to test entering pupils with the Stanford-Binet. This measure of intelligence is supplemented by a group test given each year and other intelligence tests as indicated in individual cases. Achievement is usually tested each year by a standardized group achievement test battery. This is frequently supplemented

⁹ Paul R. Mort, *The Individual Pupil in the Management of Class and School*. New York: American Book Company, 1928.

by a reading test and other achievement tests as the need arises.

HOW ONE SCHOOL STUDIES BEGINNERS

Every spring, in one school system, the names of parents who expect to enroll their children in September are obtained from the Parent-Teacher Association, from brothers and sisters of young children, and from the school nurse and visiting teacher.

Letters are sent to these parents giving the exact time each child is to come to the school building for a physical examination and vaccination. This examination is conducted as described on pages 269 and 388.

On the first day of school each new pupil is registered in the principal's office, thus freeing the teacher's attention for the children themselves and separating the mother or older sister or brother from the child. As each child enters the classroom, the teacher greets him in a friendly way and shows him the hook in the cloakroom on which he is to hang his coat and the locker in which he is to keep his possessions. In the room are a number of centers of interest — tables of attractive books, materials for construction, toys, and apparatus — which he is free to explore. To a timid child the teacher frequently assigns some practical tasks, such as feeding the goldfish or watering the flowers, in the performance of which he will lose his timidity and begin to explore the room with the other children. The musical signal which is used to call the children to attention is clearly explained and used two or three times during the morning. They then play a game of learning one another's names.

The teacher usually tells a story. Sometimes children volunteer to tell a story. During the rest of the first day they engage in other typical first-grade activities of their own choosing. The teacher moves from group to group becoming acquainted with individual children and giving individual instruction as needed. The children's choice of activity, their conversation with other children, their re-

sponses to the teacher's casual questions, and their methods of work, all give the teacher valuable information about their capacities and needs.

After an orientation period of two weeks the children take an intelligence test in groups of five or six. On the basis of the test results and the teacher's observation and informal testing, the children form different learning groups in which they may get the experiences they need at their present stage of development. The Stanford revision of the Binet-Simon Test is given to individual children who show a discrepancy between their daily performance and the results of the group test. Special classes provide suitable activities for exceptional children who either might be a menace to other children or who are not able to profit by the instruction offered in the regular classrooms. When a child in a special class shows improvement, he is allowed to return to his regular class for all or part of the time.

This method of studying first grade children, comprising as it does, summer contacts with parents, opportunity for children to choose the activities they prefer and to talk and work with other children, and the use of standardized tests, has been found practical and effective. It may be used in any school system that is truly concerned with the best development of every child.

STUDYING THE CHILD'S HEALTH

A study of the child's health and physical condition should include (1) a medical examination, (2) an appraisal of his nutritional condition, (3) tests of his strength and posture, and (4) an inventory of his present health practices. This information is needed in order to introduce an effective educational and corrective program and to help every child attain the best health possible for him.

Medical Examination. — The medical health examination should be given annually by the family physician or by the school physician in cases in which the family does not have adequate medical service. The health examination is both diagnostic and educational. In the first place, defects of

hearing, vision, teeth, and organic functioning are detected. Too often children have been accused of stupidity when the real reason for their failure in school was defective vision or hearing. The children made no complaint about their difficulties because they thought the printing on the blackboard and in books was as indistinct to everyone else as it was to them, or they imagined that other children, too, had to guess what the teacher was saying. Such conditions are inexcusable when the teacher can detect the more serious defects and refer these cases to experts for a more thorough examination.

More progress has been made in the detection of physical defects than in their correction which should be the second phase of the medical examination. The low percentage of defects corrected in some situations is not always the fault of the parents. It is due often to failure to transfer effectively the information derived from the medical examination to the persons responsible for making the correction or to arouse society to provide adequate medical care for all.

In the course of the examination there may be inculcated in the child, parent, and teacher a favorable attitude toward medical and dental care, and all preventive measures. They may obtain information concerning desirable health habits and medical facilities of the community, dangers of self-medication, and a better understanding of individual health needs.¹⁰

The information derived from the examination should be put on a cumulative health record. In addition to the usual technical items relating to the condition of heart, lungs, nose and throat, teeth, vision, hearing, posture, nutrition, and thyroid; communicable diseases and other significant ailments; immunization against diphtheria, typhoid, smallpox, and similar ills; number and causes of absences; the physician should write a brief descriptive paragraph or two giving in nontechnical language his appraisal of the

¹⁰ George T. Palmer and Mayhew Deniberry, "Appraising the Educational Content of a Health Service Program," *American Journal of Public Health and The Nation's Schools*, XXVII (May, 1937), 476-480.

health status of the child and his recommendations for improving it.

In some school systems teachers are taught to make preliminary examinations and to refer to the physician those children who are in need of a more thorough physical examination. This plan seems preferable to the makeshift of having the school physician attempt a superficial examination of all the children.

Appraisal of Nutritional Condition. — In the medical examination the physician obtains valuable cues as to the child's nutritional condition. He may check his appraisal by applying the ACH index or other combinations of scientifically selected anthropometric measurements. Although height and weight do not accurately indicate nutritional condition, the monthly weighing and measuring is of value in arousing the child's interest in healthy growth and in detecting failure to gain over several months' time, as well as periods of very rapid growth.

Tests of Strength and Posture. — The hand dynamometer used in testing the strength of the forearm rarely fails to interest boys and girls. Posture tests likewise arouse interest and have, in addition, an educational value. The posture silhouette or photograph can be studied by the child and motivates his efforts to improve upon it. Equally important information may be obtained by observing the child in action. Poor posture can be corrected by giving attention to the underlying causes. Merely to tell a child to "sit up straight" or "hold yourself up" is of little avail. The child who can stand properly, will, the child who is physically weak will respond to such directions by assuming a different way of standing badly. Children whose muscles are firm, who sit in chairs adapted to their bodily proportions, who maintain a nice balance between rest and activity, and who are happy, self-confident, and self-reliant do not have protruding abdomens and shoulder blades or show a general tendency to slump forward.

Daily Morning Inspection. — The daily inspection should not take the form of an unpleasant, formal checkup em-

barrassing to the child and distasteful to the teacher. It should, instead, be a means of encouraging the cultivation of health habits and of ascertaining whether each child is well enough to be in school that day. Every morning, as each child comes into the classroom, the teacher should observe his appearance, noting unusual pallor or flush, fatigue, a new cough, running nose, skin eruption, and condition of his throat. This simple friendly contact and inspection will reduce the number of cases of communicable diseases which are all too common in the primary grades.

Present Health Practices — Health habits should be studied because they are building blocks of healthful living. Although they develop, to a large extent, as responses to a favorable environment, they should occasionally be studied directly. The first year of school is a good time to make an inventory of the child's health habits so that deficiencies and poor functioning may be brought to light. The answers to a questionnaire obtained in private interviews from parents or other dependable persons are one important source of information. A simple questionnaire to be filled in by the children may include the following items:

I got up this morning at _____.
I went to bed last night at _____.
For breakfast I ate _____.
For lunch I ate _____.
For supper I ate _____.
Between meals I ate _____.
I had my meals _____.
I was out of doors between _____ and _____.

If this information is obtained with the interest and co-operation of the children, it will suggest to teachers and parents that certain changes may be desirable in the daily routine of many of the children. The written reports may be supplemented and checked by a survey of the food actually eaten by children at lunch time.

By these various means the health of individual children

may be appraised with a view to helping them attain a higher level of physical efficiency

SUMMARY

Although the teacher or parent cannot apply all the methods of scientific child study, he can do a number of things to increase his understanding of children and to promote their best development. Among the methods of child study he may use are the following:

1. As a background he should learn as much as possible about the typical behavior of children of the age with which he is working. This knowledge will help him to see things which would otherwise pass unnoticed and will show him the extent to which a particular pupil differs from the majority of children in any respect.
2. He will observe individual children with definite questions relating to their growth and development in mind. Practice in doing this will improve his skill in observing.
3. He will talk informally with individual children to ascertain their knowledge and interests. A teacher frequently can obtain better co-operation from the children in his class than a specialist coming in from the outside, who may fail to win the confidence of the children.
4. He will use standardized tests whenever these are helpful.
5. He will learn as much as possible about the parents and home life of a pupil in order that he may interpret the child's school behavior more accurately.
6. He will be greatly aided by keeping records of a child's desirable and undesirable behavior, noting
 - a. Anything in the physical environment that may have caused the behavior, such as an overheated room, a too great temptation, such as a plate of freshly baked cookies, or the demand that he sit still for a long period.
 - b. Anything in the social environment, such as a dispute between parents as to whether the child should do one thing or another, the presence of a strange child, or the teasing of a humorous but thoughtless big brother or uncle.

c. The responses the child makes:

- (1) When he meets new problems: Does he go to someone for help, cry or become angry, give up without trying, or persist until he succeeds?
- (2) When he has succeeded Does he tell about his success, busy himself with other work, or repeat the act he has just performed successfully?

The teacher and parent will follow with interest emerging technics now being used by specialists: play technics of diagnosis and therapy, use of art media and plastic material, analysis of the child's response to pictures and puppet-shows, and the interpretation of his stories and free compositions.¹¹

No one method is adequate. The child's physical condition, his heredity, his home and school environment, his previous progress all help to explain his present behavior. Obtaining a knowledge of the underlying causes of undesirable behavior is the first step in modifying it.

QUESTIONS AND PROBLEMS

1. Organize into a practical study program as many of the suggestions given for studying primary children as you can apply to your class or to individual children in whom you are interested

2. What is an IQ? How is it obtained? Does it increase with the age of the child? How should it be interpreted?

3. What kind of work is appropriate for first-grade children with IQ's below 70?

4. How can children of superior intelligence be prevented from forming habits of idleness?

5. Is a child with high intelligence usually deficient in health or some other respect?

6. How can you account for the fact that sometimes children who do their lessons well in school are in poor physical condition?

7. Make a survey of the health status and habits of a group of children, and work out ways of using the information thus obtained in their education

8. If possible, visit a child guidance clinic in order to observe methods of studying and treating children in the first three grades of school.

¹¹ G. M. Leary, "Free Compositions as an Aid to the Teacher in Child Guidance," *Journal of Experimental Education*, V (September, 1936), 26-29.

REVIEW QUESTIONS

PRIMARY PERIOD

- 1 Of the following, check the interests, activities, and abilities characteristic, in general, of children nine years of age
 - a Interest in games of chase
 - b Average annual gain of four to six pounds
 - c Liking for quiet games and fine sewing
 - d A vocabulary of 5,000-10,000 words
 - e Ability to detect certain verbal absurdities
 - f Interest in reading stories having surprise and plot, and dealing with animals and familiar experience
- 2 Check the ways you would recommend to a parent for preventing and treating fears of primary children
 - a Teach the child exactly what to do in case of real dangers
 - b Make the child ashamed of being a coward
 - c Avoid unnecessary loud noises
 - d Improve the child's physical condition
 - e Introduce unfamiliar objects and people when the child is feeling safe and contented
 - f Use fear of bogie man, policeman, teacher, and the like as a means of making the child obey
 - g Be calm yourself in situations of danger
 - h Associate pleasant experiences with things that the child tends to be afraid of
 - i If the child is intensely afraid of something, force him to meet the situation anyway
 - j. Protect the child from all situations which have any element of danger in them.
 - k Discover the specific cause of a given fear response
 - l Tell the child how foolish his fears are

Check the recommendations you would make to a mother or teacher for preventing and dealing with outbursts of anger

 - a Avoid unnecessary interference with the child's movements and activities.
 - b. Since violent anger is harmful physiologically, give the child the thing he wants so that he will become calm
 - c Make any promise to satisfy the child at the time even though it must be broken later
 - d. Discover and remove physical causes of irritation
 - e Become angry yourself to show the child you are master.
 - f Let the child know the schedule for the day so he will know what to expect at a given time
 - g. Take hold of the child firmly and make him sit still

- h. Pay no attention to the child while he is angry. Leave him by himself
- i. Help child to acquire the knowledge and skill necessary in order to meet difficulties constructively and direct his energy effectively.
- 4. Of the following, check the four most important causes of disobedience in primary children.
 - a. Heedless and frequent requests by parent or teacher.
 - b. Desire on the part of the child to get new experiences.
 - c. Stubbornness.
 - d. Giving a few simple commands.
 - e. Lack of intelligence on the part of the child.
 - f. Imaginary companions.
 - g. Exposure to temptations too great for his stage of development.
 - h. Giving commands to be remembered longer than the child with his short memory span is able to remember.
 - i. Child's desire to take advantage of good nature.
- 5. Check the four most serious mistakes made in punishing primary children.
 - a. Use of threats and bribes
 - b. Inconsistence in treatment of child — being very severe one day and very lax another day.
 - c. Allowing dissatisfaction to be attached to the person rather than to the wrong act.
 - d. Using the natural consequences of an act as punishment.
 - e. Giving the child attention when his conduct is satisfactory.
 - f. Making child pay for damage done.
 - g. Failing to distinguish between what is good for the child and what is convenient for teachers and parents.
- 6. Mark with an *S* those things which usually make a response satisfying to primary children; and mark with an *A* those things which make a response annoying, other things being equal
 - a. Interference with an activity in which a child is engaged
 - b. Doing something he is in the habit of doing.
 - c. Carrying out a natural tendency.
 - d. Teacher's approval
 - e. Reading a story when he is ready for reading.
 - f. Doing something he is not ready to do
 - g. Approval of classmates
 - h. Failure to do a thing as it ought to be done.
 - i. Scorn of teacher and classmates.
 - j. Being ignored by people.
 - k. Success in getting a desired result
 - l. Special privileges as a consequence of good work.
 - m. Natural painful consequence of an act

- 7 Number in order the usual steps which should be taken in acquiring reading ability.
- Reading signs on the street, at home, and at school which are significant to him.
 - Reading much easy reading material.
 - Learning to distinguish objects.
 - Getting the idea that printed words have meaning for him.
 - Learning the meaning of spoken words.
 - Learning to look at and actually see printed words
 - Reading about experiences he has had
 - Reading about new and strange experiences.
8. Mark with a cross the one answer you think is best in each exercise.
- a. A sudden dislike for a child, appearing without apparent reason, is probably caused by
 - some resemblance to another person or situation with which some strong emotional feeling has previously been attached
 - the child's clothes.
 - an inherited dislike for children of that type
 - a perversion of the maternal instinct.
 - b. To be educationally valuable an activity should
 - contribute to the child's growth and appeal to his interests so that he will work at it whole-heartedly even when he meets difficulties.
 - keep him amused and happy for a time.
 - be hard for him to do so that he will fail frequently and become hardened to difficulties.
 - train the will and memory in general.
 - c. An undesirable way in which children sometimes react to difficulties is
 - by working hard to overcome the difficulty.
 - by asking other people for their opinion.
 - by imagining that they are doing everything successfully.
 - by blaming themselves for their failures
 - d. One way in which the school can provide for individual differences among children is by
 - letting each child do as he pleases
 - making the school work follow the interests of each individual child.
 - having each pupil read out loud one paragraph of the class reader.
 - studying the children and providing a variety of experiences suited to their needs
 - e. The child's first permanent teeth should be expected at the age of
 - two years.

- four years
- six years.
- eight years.
- f Of the following, the best way to help primary children form good social habits is
 - by talking to them about good deeds
 - by making the good acts which they perform satisfying to them
 - by compelling them by fear of punishment to sit still and be good
 - by giving them moral stories to read.
- g. If your eight-year-old child does not like to play with children, you should
 - let him spend his time with adults
 - tell him he needs to play with children.
 - read fairy tales to him.
 - form a small play group for him and some of the other children in the neighborhood
- h When children continually fail in their school work
 - they try harder.
 - they begin to realize the importance of school work and school
 - they are receiving good moral training
 - something is wrong with the curriculum or with the methods of child study and instruction
- i. If a child has a tendency to excessive daydreaming you should
 - interest him in active work and play
 - encourage him in his imaginative dreaming.
 - keep books away from him.
 - see that he is never left alone.
- j A strong emotion generally
 - improves accuracy and judgment.
 - makes learning more efficient.
 - affects learning unfavorably.
 - is the most desirable way to stimulate a child's effort
- k. A desirable attitude for the teacher or parent to have toward sex questions is
 - secrecy.
 - sentimentality.
 - evasiveness.
 - matter-of-factness
- l. The most desirable type of relationship between teacher and child is
 - a strong love.
 - a strong dislike.

- an indifferent attitude
 - a friendly and interested attitude
 - m. A child who has high intelligence will probably
 - be physically weak
 - have criminal tendencies.
 - cause trouble in a well-planned class
 - do well in reading, arithmetic, and abstract thinking
 - n. If a first-grade child has interrupted another person after she has definitely been told not to do so, the teacher or parent
 - should say, "if you do that again, I'll punish you."
 - pay no attention to the interruption.
 - tell the child she must leave the group until she can remember not to interrupt when another person is speaking
 - slap the child hard so that she will remember next time the unpleasant consequences of interrupting.
 - o. If a child is much interested in some activity at a time when the mother wishes him to do some work for her, she should
 - tell him to come and do the work at once.
 - leave him alone for the present and plan in the future definite times each day for her work and his activities.
 - complain to his father that the child never helps her.
 - not require the child to help because childhood is the time for play
9. Mark with a cross (+) the statements which you think are true and with a zero (0) those you think are false. Give reasons supporting your answers
- a. — One cause of tardiness among primary children is an undeveloped time sense.
 - b. — Inattention and restlessness of children in school are always caused by physical fatigue.
 - c. — An intense affection between teacher and pupil is desirable
 - d. — The favorite stories of primary children are about animals and other children, and have surprise and plot.
 - e. — An eight-year-old child should be able to give correct definitions for fifty words in the Binet Test
 - f. — Excellent suggestions for improving the reading ability of individual children are given by Gates.
 - g. — The enriching of the meaning of words is as important as the mere number of words a child uses.
 - h. — The child talks primarily to express himself.
 - i. — The best way to improve a child's vocabulary is to give much drill on words and their definitions
 - j. — A child who stutters should not be called on in class.
 - k. — A child should be taught to be intensely afraid of some things in order to prevent him from running into real danger.

- l. — Thorough drill on one reader is better in the second grade than wide reading of easy material.
- m. — Reading involves a process similar to reasoning.
- n. — A common reason for lack of interest in reading is too great difficulty of the reading material.
- o. — Speed in reading should be emphasized by primary teachers
- p. — Reading is from the beginning a "thought-getting process"
- q. — An excellent way of establishing correct habits of eye movement in reading is to provide a large amount of easy reading material in which the pupils are interested.
- r. — Children of low intelligence can be brought up to the level of any other children in the solution of arithmetic problems if sufficient practice is given
- s. — Computation in arithmetic is made easier if the numbers are always connected with concrete objects.
- t. — In arithmetic, speed is less important than accuracy.
- u. — Vivid firsthand experience should be the basis of compositions written by pupils.
- v. — All children of the same grade read the same kind of material at the same rate.
- w. — If a child is taught the meaning of every word in a paragraph, he will then be sure to understand the meaning of the paragraph as a whole.
- x. — Fast readers, as a rule, fail to comprehend what they read.
- y. — The Seashore Tests are good tests of musical ability.
- z. — In health education more emphasis should be put on making the environment healthful than on learning health rules.

BIBLIOGRAPHY

ANDERSON, JOHN E. (Chairman). *The Young Child in the Home; a Survey of Three Thousand American Families*. New York: D Appleton-Century Company, 1936. Pp xxi + 415.

White House Conference material on the physical, social, and emotional life of 4,000 children, white and negro, between the ages of birth and twelve years, with special reference to socioeconomic levels

ANDRUS, RUTH, and PEABODY, MAY E *Parent-Child Relationships, Outlines for Group Discussion*. New York: John Day Company, 1930. Pp xvi + 168

Material for mothers' study groups Contains many excerpts from books on child study and the family. Excellent for building one's own philosophy of family life.

- BAIN, WINIFRED E. *Parents Look at Modern Education*. New York: D. Appleton-Century Company, 1935. Pp 330.

An excellent book to "help the older generation understand the new," and to explain theories and practices required for meeting modern conditions through adequate education.

- BENTLEY, JOHN EDWARD *Problem Children* New York: W. W. Norton and Company, Inc., 1936. Pp xxiii + 437

A straightforward, simple, clinical approach to the study of handicapped children in the light of their physiological, psychological, and social status, with special emphasis on problems of physical health.

- BERNE, ESTHER VAN CLEAVE *An Experimental Investigation of Social Behavior Patterns in Young Children*. Studies in Child Welfare, Vol 4, No. 3, Iowa City, Iowa: University of Iowa, 1930. Pp. 93

A report of observations of the social behavior of children introduced singly into a controlled environment Their co-operation and interest in the group were measured when an adult was present and when she was out of the situation.

- CAMERON, HECTOR CHARLES. *The Nervous Child* (fourth edition). London Humphrey Milford Oxford University Press, 1929. Pp viii + 249.

An up-to-date edition of a popular book dealing simply and practically with problems of management and conduct, environmental needs, and social factors as they have a bearing upon children's restlessness, instability, and hypersensitiveness which is commonly characterized as "nervousness"

- CUNNINGHAM, BESS V. *Family Behavior, A Study of Human Relations*. Philadelphia: W. B. Saunders Co., 1936. Pp. 7-471.

A study of the family as a social institution, showing its position among other organizations, and its unique function in the development of individuals An important emphasis on the family factors in child adjustment and growth.

- CURTI, MARGARET WOOSTER. *Child Psychology* New York: Longmans, Green and Company, 1930. Pp ix + 527.

A topical treatment of the psychology of normal children, introducing in a functional way the results of much important experimental and observational work.

- FOSTER, JOSEPHINE C., and HEADLEY, NEITH E. *Education in the Kindergarten*. New York: American Book Company, 1936 Pp. xii + 368.

A comprehensive, concrete treatment of the five-year-old and his educational needs.

- GATES, ARTHUR I. *The Improvement of Reading; a Program of Diagnostic and Remedial Methods* (revised edition). New York: The Macmillan Company, 1935 Pp xvi + 668.

A detailed account of a system of measuring achievement, diagnosing difficulties, and conducting instruction in reading. A very helpful book to anyone engaged in the teaching of reading.

(Chairman) "Special Methods and Psychology of the Elementary-School Subjects," *Review of Educational Research*, VII (December, 1937), 451-581.

A review of the literature published from July 1, 1934 to July 1, 1937

- GREENE, HARRY A., and JORGENSEN, ALBERT N. *The Use and Interpretation of Elementary School Tests*. New York: Longmans, Green and Company, 1935 Pp xxviii + 530

A handbook on measurement for teachers and students of elementary education

- GRIFFITHS, RUTH. *The Study of Imagination in Early Childhood and Its Function in Mental Development*. London: Kegan Paul, 1935 Pp 382

Describes a method which allows the child opportunity to give expression in speech and in action to his thought and fantasies, as well as presenting hypotheses as to the function of fantasy.

- GROVES, ERNEST R., and BLANCHARD, PHYLLIS. *Readings in Mental Hygiene*. New York. Henry Holt and Company, 1936. Pp. xii + 596.

Selections of significant material from the writings of authorities in the field of mental hygiene.

- HEATH, ESTHER. *A Study in Social Treatment; the Approach to the Parent*. New York. The Commonwealth Fund, 1933. Pp. xviii + 163.

A description of four problem cases brought to a child guidance clinic — analysis of the case, treatment suggested to the parents, and outcomes of the treatment.

- HILDRETH, GERTRUDE. *Learning the Three R's*. Minneapolis, Minn.: Educational Publishers, Inc, 1936. Pp. x + 824.

An exceptionally able presentation of learning in the elementary school — scientifically sound, practical and concrete, interestingly and clearly written.

- HILL, MARJORIE. *Training to Reason*. Australian Council for Educational Research, Series No. 45. Melbourne: Melbourne University Press, 1935. Pp. 71.

The results of a research to discover whether or not children could be trained to reason.

HOLLINGWORTH, H. L. *Mental Growth and Decline*, Chapter X New York D Appleton-Century Company, 1927. Pp xii + 396

This chapter describes the child "at about the time of customary school entrance"

HOLLINGWORTH, LETA S. *Gifted Children Their Nature and Nurture* New York The Macmillan Company, 1926 Pp 24 + 374.

An accurate and scholarly treatment of the problems and potentialities of superior children

— *Helping the Nervous Child* New York The Lincoln School of Teachers College, 1927 Pp 19

An outstanding contribution to the subject, briefly, clearly, and concretely presented

IDE, GLADYS G. *Why Children Fail* Boston Chapman and Grimes, 1934 Pp 346

An emphasis on social and emotional as well as intellectual and educational factors in failure

KANNER, LEO. *Child Psychiatry* Springfield, Ill Charles Thomas, 1935 Pp. xviii + 527

A fusion of facts from the fields of pediatrics and psychiatry focused upon analysis of children's mental difficulties, methods of diagnosis and treatment of children's psychiatric problems Although intended for pediatricians, it is a useful reference to anyone working in the field of child study

MCLEOD, BEATRICE. *Teachers' Problems with Exceptional Children; VI Children of Lowered Vitality* Office of Education Pamphlet No 56, 1934 Washington, D C Superintendent of Documents, 1934 Pp 16.

A very good consideration of a too frequently neglected factor in child adjustment The entire series is valuable

MEAD, CYRUS D., and ORTH, FRED W. *The Transitional Public School* New York The Macmillan Company, 1934 Pp xxii + 371

A discussion of the possibilities of progressive education in a public school, handicapped by large numbers of pupils and insufficient modern equipment

MEARNS, HUGHES. *Creative Youth* Garden City, New York: Doubleday, Doran and Company, 1930 Pp. 234

Gives interesting examples of creative literary work by children as well as a theory of teaching and training aimed to foster creative talent

MERRY, RALPH VICKERS. *Problems in the Education of Visually Handicapped Children* Cambridge. Harvard University Press, 1933 Pp 243

An excellent, comprehensive treatment of the problems of the education of visually handicapped children, with unusually good emphasis on personality problems and guidance

MONROE, WALTER S., and STREITZ, RUTH *Directing Learning in the Elementary School*. Garden City, New York: Doubleday, Doran and Company, 1932. Pp. ix + 480.

A readable and practical presentation of more progressive methods for traditional schools

MOORE, ANNIE E *The Primary School*. Boston. Houghton Mifflin Company, 1927. Pp. 19.

An excellent book to give the school setting of the primary period, containing much specific illustrative material as well as a sound philosophy of education

MORGAN, J. J. B *The Psychology of the Unadjusted School Child* (revised edition). New York: The Macmillan Company, 1936. Pp. vii + 339

A practical application of principles of mental hygiene to the behavior problems with which teachers frequently have to deal.

MORT, PAUL R *The Individual Pupil in the Management of Class and School*. New York: American Book Co., 1928. Pp. 383.

An excellent presentation from the point of view of an administrator, of methods of guiding individual pupils, diagnosing individual difficulties, and providing for individual needs.

MUNKRES, ALBERTA *Which Way for Our Children? A Handbook in Religious Education for Parents and Teachers*. New York: Charles Scribner's Sons, 1936. Pp. xi + 198.

Straightforward and sensible answers to questions relating to the religious education of children.

MURPHY, GARDNER, MURPHY, LOIS BARCLAY, and NEWCOMB, THEODORE M *Experimental Social Psychology, an Interpretation of Research upon the Socialization of the Individual*. New York. Harper and Brothers, 1937. Pp. xi + 1121.

A creative, comprehensive summary of investigations relating to the problems of social psychology on all age levels.

Educational Diagnosis. National Society for the Study of Education Yearbook, XXXIV, 1935. Pp. x + 531.

An excellent summary of the diagnosis of behavior problems.

RICHARDS, ESTHER LORING *Behavior Aspects of Child Conduct*. New York: The Macmillan Company, 1932. Pp. xiv + 299.

An unusually well-rounded and balanced, concrete treatment of child behavior which translates medical, social, and psychological principles into practical suggestions for the education of children.

- RIVLIN, H. N. *Education for Adjustment The Classroom Applications of Mental Hygiene* New York D Appleton-Century Company, 1936 Pp 419

A simple treatment of problems of pupil adjustment intended for supervisors and teachers, including a summary of psychiatric and psychological principles, the background of problem behavior, the application of principles of mental hygiene to the classroom, and the mental hygiene of the teacher

- ROBERTS, LYDIA J *Nutrition Work with Children* (revised and enlarged edition) Chicago University of Chicago, Press, 1935. Pp. xix + 639

A thorough study of the prevalence, causes, and treatment of malnutrition of children

- SAYLES, MARY B *The Problem Child in School: Narratives from Case Records of Visiting Teachers* New York. Joint Committee on Methods of Preventing Delinquency, 1925 Pp 287.

A description and simple interpretation of some of the common problems of school children

- SEHAM, MAX, and SEHAM, GRETE *The Tired Child*. Philadelphia: J B Lippincott Company, 1926 Pp xvi + 342

A thorough and practical treatment of an important aspect of child development

- SHERMAN, MANDEL *Mental Hygiene and Education*. New York: Longmans, Green and Co., 1934 Pp. xi + 295

A description with many concrete illustrations of emotions, attitudes, personality, types of behavior—their study and treatment—as related to children of all ages.

- STODDARD, GEORGE D (Chairman). "Mental and Physical Development," *Review of Educational Research*, VI (February, 1936), 1-152

An excellent summary of investigations relating to mental and physical development from birth to maturity, written by outstanding child psychologists and research workers

- STRAIN, FRANCIS B *New Patterns in Sex Teaching*. New York: D. Appleton-Century Co., 1934 Pp xvi + 242.

Gives practical and usable information to be used in teaching sex to young children. Actual answers to actual questions asked by children.

- TARKINGTON, BOOTH. *Little Orvie* Garden City, New York: Doubleday, Doran and Company, 1934. Pp 383.

A realistic picture of a seven-year-old, befuddled small boy, with his imperiousness to what adults call logical thinking and the "inescapable dementia praecox" of early youth

THOM, DOUGLAS A. *Everyday Problems of the Everyday Child*. New York: D. Appleton and Company, 1927. Pp. xiii + 349.

A description, analysis, and suggested treatment of common behavior problems of children, based on scientific findings, and written in a simple, convincing style.

THORNDIKE, EDWARD L. *The Psychology of Arithmetic*. New York: The Macmillan Company, 1922. Pp. ix + 314.

An illuminating application of psychological principles to arithmetic.

TRAVIS, LEE E. *Speech Pathology; a Dynamic Neurological Treatment of Normal Speech and Speech Deviations*. New York: D. Appleton-Century Company, 1931. Pp. xxxiv + 331.

A technical treatment of the neuromuscular basis of speech, causes of speech disorders, methods of diagnosis and special problems, notably stuttering.

VAN ALSTYNE, DOROTHY. *The Environment of Three-Year-Old Children: Factors Related to Intelligence and Vocabulary Tests*. New York: Teachers College, Columbia University, 1929. Pp. vii + 108.

Gives experimental findings on relationships between specific factors of home environments and scores on intelligence and vocabulary tests.

WALLIN, JOHN EDWARD WALLACE. *Clinical and Abnormal Psychology*. Boston: Houghton Mifflin Company, 1927. Pp. xxii + 649.

Gives psychological methods and diagnostic technics useful in clinical work with children, with consideration of causes and educational implications of each type of defect.

WRIGHT, HARRY B. *Toys Every Child Can Make*. Milwaukee, Wisconsin: The Bruce Publishing Company, 1927. Pp. 64.

A book of drawings and directions for making a variety of paper toys.

PART V

FROM THE PRIMARY PERIOD TO
THE ADOLESCENT YEARS

CHAPTER XVIII

DEVELOPMENT IN THE POSTPRIMARY-PREADOLESCENT PERIOD

This period includes children in the fourth, fifth, and sixth grades and, in many cases, in the seventh and eighth. Its age range covers the years nine to thirteen or fourteen. The range is shifting because the onset of puberty, which marks the beginning of adolescence, varies with different individuals. As in the case of the other periods there are no hard and fast boundary lines.

The hypothetical "average child" is still elusive. He defies definition. The behavior of a ten-year-old child depends upon his stage of maturity, previous acts, thoughts, and feelings, as well as on his present bodily condition and his immediate environment. Each child has a past in which he has developed a unique personality.

At the same time he possesses certain developmental trends in common with other boys and girls of the same age, as well as certain characteristics which he has incorporated into his own personality pattern from the culture surrounding him.

PHYSICAL DEVELOPMENT

Growth in Height and Weight.—From nine to eleven years of age children appear to be capitalizing their previous growth gains. In the majority of cases strain from very rapid or uneven growth is absent. In approximately nine-tenths of the cases studied boys seven to eleven years of age maintained their relative position in height. In other words, they did not noticeably change status in their group with respect to height during these years.

This period of relatively slow growth is followed by the

preadolescent spurt in growth in height and weight. Increase in average gains in height and weight is shown in Table V. The annual gain in height of girls at twelve years of age is, on the average, as large as it will be during any of the immediately succeeding years. A year or two before the onset of puberty an acceleration in rate of growth begins. During this accelerated phase of growth for both boys and girls there appears to be an association between growth in height and height itself.¹ The variability, however, is marked. A tall boy may become average; a short boy may become average. The chances are small, however, that a distinctly tall boy will become short.

Height and weight are also associated with early maturity. Evidence is accumulating to show that individuals who mature early are usually taller and heavier at each age prior to adolescence than those who mature later.

TABLE V
AVERAGE HEIGHT AND AVERAGE GAIN IN WEIGHT
(Baldwin-Wood Tables)

	NINE YEARS		TEN YEARS		ELEVEN YEARS		TWELVE YEARS	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Average medium height in inches	52	52	54	54	56	56	58	58
Average annual gain in pounds for above height	6	7	6	8	7	10	9	13

In this age period girls are maturing faster than boys. A fair increase in the rate of growth of girls has already taken place by twelve years of age. At twelve or thirteen years of age girls are about a year ahead of boys in the development of the bones of the wrist, one of the best single measures of physical maturity. Should not this difference in maturity be considered in the school classification of

¹ Carroll E. Palmer, Riiti Kawakami, and Lowell J. Reed, "Anthropometric Studies of Individual Growth. II. Age, Weight, and Rate of Growth in Weight, Elementary School Children," *Child Development*, VIII (March, 1937), 47-61.

pupils? What is the effect on boys of being in the same grade group with girls advanced in every respect? Is it because the boys possibly are under more pressure than girls that they show a larger percentage of speech difficulties and discipline problems?

Although the possibility of rapid gains in height and weight prior to puberty has been demonstrated, there are other measures of physical growth that do not show any preadolescent increase. Some, such as the thickness of the subcutaneous tissue in boys, may even show a decrease.

Physical Growth of Mentally Deficient Boys.—The rate of physical growth among mentally deficient boys is slower than that of normal boys and appears to be related to the degree of mental deficiency.² They show an extended period of immaturity. Although the subnormal boys continue to grow over a longer space of time than do the normal and superior boys, their ultimate size, on the average, is below that of private school boys. They show retardation not only in height and weight but also in such developmental features as learning to walk, teething, and the onset of pubescence. Their mortality rate is nearly twice as high as that of the general population. The evidence brought to light in Flory's investigation³ points to the general conclusion that mentally deficient boys tend also to be physically inferior.

Relationships between Mental and Physical Growth.—Although a relationship between mental and physical development has been noted at both ends of the distribution, mass investigations on the basis of age norms have indicated slight relationship between the mental and physical status of children. Abernethy,⁴ in an admirable summary of this

² Charles D. Flory, *The Physical Growth of Mentally Deficient Boys*. Monographs of the Society for Research in Child Development, Vol. I, No. 6. Washington, D. C. Society for Research in Child Development, National Research Council, 1936.

³ *Ibid.*, p. 95.

⁴ Ethel Mary Abernethy, *Relationships between Mental and Physical Growth*. Monograph of the Society for Research in Child Development, Vol. I, No. 7. Washington, D. C. Society for Research in Child Development, National Research Council, 1936.

question and a report of an original investigation, called attention to the following results

1. Of the various measures studied, standing height was most closely related to intelligence, with a median coefficient of correlation of 0.30 in the case of boys
2. There is a tendency for the correlations between mental and physical measures to become still smaller after age fourteen or fifteen
3. A spurt in mental growth does not appear to parallel the preadolescent spurt in physical growth. Changes in rate of mental and physical growth have not been found to be directly related.
4. The type of mental development is similar in boys and girls, although the rate of their physical maturing differs.

Deviations in Physical Development — Extreme disturbances and deviations in physical maturity are significant for the child's adjustment. Among these deviations may be mentioned oversize, undersize, extreme acceleration or retardation in rate of growth, disproportionate growth of certain parts of the body, and inappropriate growth. Girls, especially, feel self-conscious about being a great deal taller than their classmates and during adolescence may find heterosexual adjustment exceedingly difficult. Boys, on the other hand, usually are more disturbed at being undersize and are relieved to know that there is some chance for a short boy eventually to gain average stature. One undersized boy was greatly relieved when, with the school physician, he studied the X-ray pictures of his wrist bones. Thus, he learned that he had not yet reached his physical maturity and that he would undoubtedly grow taller. Rapid acceleration of rate of growth during the year preceding puberty puts an additional tax on the vital organs and requires protection against strain from overexertion. Uneven growth may create problems of awkwardness and self-consciousness. Inappropriate growth, as in the case of the boy whose form takes on feminine contours, either temporarily or permanently, presents still more serious problems of adjustment.

Slowness in sexual maturity disturbs another small group of children

Physical acceleration coupled with mental retardation is an especially disturbing form of development. In the traditional school such an individual's mental status places him with children much below him in size. His size may encourage a tendency to bully smaller children. Owing to his apparent maturity he is constantly prodded to achieve beyond his real ability. This creates a situation which is likely to generate emotional storms, lead to antisocial conduct, and possibly to delinquency.

OTHER HEALTH FACTORS

The years from nine to twelve frequently tend to be the most healthy years of a child's life. A number of reasons in addition to the major factor that at this time children have the opportunity to consolidate their previous growth gains, contribute to making this a sturdy period. In the close contacts of the classroom and street, the children already have been exposed to the communicable diseases of childhood. Many, especially among the poorer children, have gained specific immunity by having caught some of the "children's diseases."

Under hygienic conditions the child of this age should be free from headache due to eyestrain, digestive disturbances, and other causes. Under proper lighting conditions and freedom from pressure his eyes should never smart or feel tired or strained.

His skin should be clear, free from pimples and blackheads. His teeth should be clean and devoid of cavities. His throat should show no inflammation or enlarged or diseased tonsils. He should breathe easily through either nostril and not breathe habitually through the mouth.

His appetite should be hearty and digestive disturbances minimized by serving him well-planned meals to be eaten under favorable conditions. In view of the fact that fast-growing children frequently need more food than their mothers, care should be taken that the child does not eat

too large a volume at one time. He should obtain his caloric requirement in four or five regularly planned meals.

The children's interest in active games tends to encourage sufficient outdoor exercise. As a rule, evening parties do not yet tempt these youngsters to keep late hours, although the movies sometimes do. They are likely to get the eight and a half to ten hours of sleep usually recommended for children of these ages.

Prevention of Disease and Accidents.—It is no longer necessary for children to have the various communicable diseases in order to be immune to them. Accordingly, the old policy of failing to protect children against measles, whooping cough, and similar diseases with the idea that it is a good thing for them to have these disorders and "get them over with" has been abandoned. There appears to be some agreement regarding the value and nature of the tuberculin test, and the Schick and the Dick reactions. Tuberculin tests have revealed cases that further examinations have shown to have lesions. In a survey of 9,482 children of a rural county the highest percentage of demonstrable lesions occurred in groups aged six, eight, nine, ten, and twelve years. Kereszturi and Park⁵ reported that the death rate from tuberculosis was cut to one-fourth through the use of the BCG vaccine. It appears to be safe for children and is being increasingly used as an additional factor in the prevention of tuberculosis. The control of whooping cough with serum and vaccine is being studied intensively.

If a child has not yet been vaccinated for smallpox, he should have the protection which vaccination gives from this dread disease. He should be tested for susceptibility to diphtheria by means of the Schick test, and if he is not immune, he should be safeguarded by some form of anti-toxin or toxoid.

Less progress has been made in accident prevention. Ap-

⁵ Camille Kereszturi and W. H. Park, "Use of BCG Vaccine against Tuberculosis in Children: Eight Years' Experience," *American Review Tuberculosis*, XXXIV (October, 1936), 437-456

proximately one-fifth of the total deaths for various age groups between two and twenty-nine years in 1932 were due to accidents, and the total number of accidental deaths is increasing each year. The number of deaths and injuries for the preadolescent age group is extremely large. Some encouragement may be derived, however, from recent statistics which show a decrease in accidents in the case of children even though the total accident rate is increasing. Many cities with sound safety programs have been able to reduce accidents approximately 20 to 30 per cent. Education and preventive measures appear to be getting results.

MOTOR SKILLS AND GAMES

Motor Ability.—Growth in motor ability during this stage of development is indicated by tests as well as by the systematic observation of children over a period of years. Tests of motor ability for children of school age are numerous. Among the best known tests of small-muscle control and dexterity are tests of tapping with the fingers, the Stenquist mechanical assembly test, Minnesota paper form-board, and O'Connor wiggly block.

The speed of tapping, which is one indication of small-muscle control, increases from one-third to two-fifths between the ages of six and twelve, and there is still room for improvement. By the end of childhood the course of development of the larger muscles of shoulder, arm, and wrist appears to have approached adult levels more closely than has speed of finger movement.

Such limited measures of motor control, however, are not very useful because they seem to be unrelated to anything of real importance in the life of the child and do not link up with his basic motor equipment. Measures of physical achievement supply more practical information regarding motor development. Rogers⁶ devised a battery of six tests which included strength of grip, strength of back and legs,

⁶ Frederick Rand Rogers, *Tests and Measurement Programs in the Re-direction of Physical Education*. New York: Teachers College, Columbia University, 1927.

vital capacity, push-ups on parallel bars and pull-ups and chinning on rings. Boys show substantial increases in this strength index during the postprimary-preadolescent years. Of the twenty items of the Brace motor ability test⁷ the nine-year-old boys and girls examined passed about 7.5; the ten-year-olds, 9; the eleven-year-olds, 11; and the twelve-year-olds, 12 tests.

In general, they are eager, active, and alert, and have good control of their bodies. They are able to run fast and to get their wind again quickly. They acquire skill in sports readily. For example, one twelve-year-old boy, who previously had had no experience in water sports, during his two months at camp learned to swim 100 yards in excellent form and to handle a canoe and rowboat expertly.

Play Interests.—Children's interest in play has been accounted for in a number of reasonable ways: as a release of surplus energy, preparation for adult life, escape from conflict or boredom, spontaneous activity engaged in for its own sake, a biological need, and a psychological need. The play life of a child is an index of his social maturity and reveals his personality more clearly than any other activity. An increased emphasis is being placed upon diagnosis and therapy through play activities. In many child guidance clinics a playroom is provided in which children's reactions to different kinds of play material may be observed and the play material may be used to release tensions and develop insight.

Although the nature of children's play varies with the environment, surveys of children's play interests have been sufficiently extensive to warrant certain generalizations. The peak of variety in play activities appears to be in the ninth year. After the tenth year a rather sharp decline becomes apparent in the number of play activities reported to have been engaged in during a week's time. Freedom to engage in a wider range of activities takes children out of their own homes to the hillsides to build caves; to the woods to

⁷ David K. Brace, *Measuring Motor Ability*, pp. 2, 3, 129. New York: A. S. Barnes and Company, 1927.

climb trees, gather nuts, construct cabins, make campfires, to the town to buy parts for radio sets and watch the big machines at work erecting new buildings; to the pond for skating and swimming; and all over the surrounding country or city streets on foot or on bicycles and roller skates. There is scarcely a play activity that some ten-year-olds do not check, whereas many of the activities, such as playing with kites, tops, marbles, drop out of the picture as the boys and girls grow older. However, individual differences in variety of play interests are evident. Some children engage in fewer than ten activities while others engage in almost one hundred kinds of recreation during a single week.

There is little co-operative teamwork at six years. Children of eight likewise play few organized games. Up to ten years of age other children are considered as auxiliaries to the game rather than as an integral part of it. At no age, however, is play exclusively social or individualistic. By ten years of age, under favorable conditions, the boys have become interested in teamwork, show more loyalty to their team, and play a larger number of organized games like football.

This interest in the team partly accounts for the increase in popularity of ball games from nine to sixteen years. During these years playing ball takes precedence over games of chase and playing with toys. Although the chasing element in games still is prominent, to it has been added skill in throwing and catching and participation in more complicated group organization.

Imaginative play decreases during this age period. To the motherly little child dolls and their accessories are

pretty much what a walnut or a ball of wool is to a kitten — a compound of real and earnest, of a make-believe that is also a pantomime of coming events.⁸

The rapid decline in doll play during the end of the post-primary period is illustrated by the percentage of girls of

⁸ Walter de la Mare, *Early One Morning in the Spring*, p. 218. New York: The Macmillan Company, 1935

different ages reported to have played with dolls, doll clothes, and doll carriages during one week: ⁹

<i>Number of Cases</i>	<i>Age Group</i>	<i>Per Cent Report- ing Doll Play</i>
296	Eight-year-olds	64
457	Nine-year-olds	65
590	Ten-year-olds	57
677	Eleven-year-olds	44
881	Twelve-year-olds	25
767	Thirteen-year-olds	8

Boys probably would show a similar decline in their interest in playing cops and robbers, G-men, and cowboys. At thirteen or fourteen there is a marked falling off in interest in childhood games, but no abrupt cessation of any specific play activity for all children at any age level.

Boys and girls in the fourth to eighth grades have expressed the following preferences for certain physical activities: ¹⁰

Fourth grade: baseball, dodge ball, jumping rope, soccer, hide-and-seek, Black Tom, rubber man.

Fifth grade: basketball goal shooting (Boys), waning interest in stunts and rhythms.

Sixth grade and above: basketball goal shooting, high jump (Boys), fistball, nine-court basketball, volley ball, social dancing.

In reading studies of play interests, it must be remembered that the preferences expressed depend a great deal upon the opportunities for play in the children's environment. Differences between boys and girls in play interests appear to be greater between the ages of eight and ten than at any other age period. This tendency probably is part of a general social divergence of the two sexes at this time. During adolescence they are more alike in their preferred forms of play, although the boys tend to engage in more vigorous

⁹ Harvey C. Lehman, "A Study of Doll Play in Relation to the Onset of Pubescence," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXIV (March, 1927), 72-76.

¹⁰ John K. Norton and Margaret Alltucker Norton, *Foundations of Curriculum Building*, pp. 150-152. Boston: Ginn and Company, 1936.

play and in play involving competition, dexterity, and skill whereas the girls tend to engage in less violent physical activities. At all ages, however, girls are usually forced by public opinion to restrict their activities to a greater degree than boys.

Bright children include in their repertoire the play activities of dull children, but spend much more time in reading. Superior children tend to be less interested in competitive games and to prefer more mature games. They are usually superior in play information.

Changes in play interests are gradual. Differences in social participation between age groups are smaller than differences among individuals of the same age. Although they follow the general trends indicated, play interests overlap from age to age and vary with the surrounding culture. A survey made by the National Recreation Association in twenty cities revealed a large percentage of children on the streets, regardless of the density of the population. Many of the children were just idling. Unless there is a strong counter-attraction and good supervision, children will play on the streets in preference to other places. Of the children seen playing, relatively few were taking part in organized games. Some of the play activities popular in tenement districts were bonfires, craps, marbles (for keeps), hopscotch, leaping over milk cans, jumping rope, and baseball.

Many popular play activities require skill, strength, and speed. Children of this age are willing to practice in order to acquire the desired proficiency. Gymnasium work, which gives opportunities for learning and testing the skills gained, is welcomed. Races that are timed, high and broad jumps that are measured, competitive games with definite scores posted, and stunts—all these activities please boys of nine to twelve years of age.

Girls enjoy folk dancing and a realistic type of dramatization. Frequently, they like cooking better than their seventh- and eighth-grade sisters. They like sewing, too, if the articles made are interesting. Constructing and furnishing playhouses, cooking, and sewing are valuable not only

for developing motor skill but also for acquiring knowledge in related subject-matter fields.

Boys like lessons in woodworking and general science. They find making radio sets, tinkering with bicycles, electric bells, and other kinds of mechanical devices, fascinating occupations. Daring exploits frequently follow their constructive activity. Lloyd W. Bertaud, when twelve years old, constructed a glider and flew 1,000 feet off a California cliff.

The best play activities for children would give pleasure and at the same time carry over into adult life. Examples of such activities might be: pitching horseshoes or playing quoits, skating, swimming, cooking, assuming full responsibility for pets, doing useful odd jobs in the house and out of doors, hiking, studying nature and music. During this age period skill in playing the piano, violin, or other musical instruments should be developed to a considerable extent by children who are interested in music. Their sense of rhythm, discrimination of sound, associative memory, and muscular control are almost as good as they will ever be. Moreover, they have more time to practice than they will have later when they enter upon the wider relationships and duties of adolescence.

Through free individual play in the primary period children should have established habits of being willing to play with others, to take turns, and to play fair. Through group games in this postprimary period they should develop obedience to rules, courage, resourcefulness, concentration, cooperation, and willingness to endure drudgery in order to gain skill.

The development of beneficial play preference is influenced by the interests of parents, by the play equipment and opportunities in the neighborhood, and by the kind of supervision provided. Interest often develops from skills; it subsequently decreases because much of the play of children includes repetition without instruction. As a result, slight improvement is made.

Direction of children's play activities should not take the

form of regimentation. It should rather suggest and make provision for interesting possibilities which a good leader could invest with dignity. He would make certain that participation in them brought satisfaction to the child.

Children's Collections. — Interest in collecting tends to be prevalent at about ten years of age for boys and eleven years of age for girls. Charles Darwin had already become a passionate collector of shells, seals, coins, and minerals in his early school years. The two main reasons why children make collections are to keep articles for future need and because of an interest inherent in the collection itself. Even the remembering of facts is a kind of collecting.

Probably more than half of the children between nine and fourteen have collections. The kind of things collected depends upon the environment and the age of the children, and is determined more or less accidentally. Children can be taught to collect important and interesting things, if they are educated with regard to their meaning and value. One fifth grade became intensely interested in making geography scrap books. The children's collections were not only large but also well selected and organized. Undirected children will often collect worthless things of slight educational value, which they jumble together. With some guidance they will collect material that vivifies facts and gives experience in organization and classification. Boys and girls collect many of the same kinds of things, although collections of marbles, stamps, guns, and flashlights are more characteristic of boys and paper dolls, school work, pictures of movie stars, letters, photos, and four-leaf clovers are more likely to be found in the collections of girls. Stamp collections have potential educational value and may become a financially profitable hobby. Even though the objects collected may not be important, the process of collecting serves a need of the child.

Collecting is a short cut to all kinds of knowledge and learning, to systematic habits of the mind and discriminating habits of the senses. It trains the eye, practices taste and judgment and is a godsend in an untidy world.¹¹

¹¹ Walter de la Mare, *op. cit.*, p. 226.

Kirkpatrick has described these years as the period of "competitive socialization." This term calls attention to the keen competitive spirit and the growth in co-operation and group spirit that is being gradually developed but does not gain prominence in this period. The term "Big Injun" age, also used to describe this period, calls attention to the delight which many children of these ages show in campfires, scouting, hunting, and other primitive activities.

HANDWRITING

Handwriting no longer is revered as an art; it is primarily a means of communication.¹² Increasingly, its place is being usurped by the typewriter with obviously good results. In the elementary schools the typewriter appears to be a valuable educational instrument which children enjoy using. Handwriting, however, is still far from being obsolete. It is used in many business firms and in large numbers of personal notes. It has not declined to a point where legible and fairly rapid handwriting is not needed at times by many persons.

How well should letters to friends be written? Actually, they are not very well written. In one study¹³ the handwriting used by adults in social correspondence was found to be, on the average, not higher than quality No. 50 on the Ayres Measuring Scale (see copy of part of scale on page 341). Housekeepers' handwriting was of this average quality. Elementary school teachers' writing was better than this average. The handwriting of clergymen's and physicians' letters was the poorest, being about quality 35, which is the average quality of the handwriting of second-grade children. Eighty-five per cent of the judges considered quality 60 adequate for social correspondence.

In commercial writing a higher quality was found. Ac-

¹² Norton and Norton, *op cit.*, pp. 245-271

¹³ John G. Kirk, "Handwriting Survey to Determine Grade Standards," *The Journal of Educational Research*, XIII (March, 1926), 181-188, and (April, 1926), 259-272

cordingly, a standard of 70 on the Ayres Scale was set for those who wish to engage in commercial pursuits

On the basis of specimens taken near the end of the second term in the Philadelphia schools the following grade standards were proposed:

For grade IV, speed (letters per minute), 55, quality (on the Ayres Scale), 50,

For grade V, speed, 65; quality, 55,

For grade VI, speed, 70, quality, 60.

On the Thorndike Handwriting Scale the following standards are suggested:

For grade IV, quality 8 at 50 letters per minute,

For grade V, quality 9 at 60 letters per minute,

For grade VI, quality 10 at 68 letters per minute.

These standards do not demand the copybook perfection formerly aimed at, but are practical standards of rapid and legible writing for everyday use. To the objectives of legibility and reasonable speed should be added ease, the desire to write well and automatically in situations requiring writing, adaptability to different purposes and mediums, and a critical evaluation of one's writing

Special attention should be paid to the writing of numbers and names, for these important items are frequently written illegibly by adults.

DRAWING

Drawing is a form of expression. There is a close relationship between concept development as expressed in children's drawings and their intelligence. Drawings made by children with mental diseases appear to differ in content and quality from those drawn by normal children. For example, many short and broken lines may be indicative of restlessness and emotional infantilism. Mott¹⁴ constructed scales by which the 562 drawings of 138 children were scored as expressive

¹⁴ Sina M. Mott, "The Development of Concepts (a Study of Children's Drawings)," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVIII (March, 1936), 199-214

of such traits as quickness to respond to a situation, participation in activities, association with others, and awareness of the environment. The scores so obtained showed a substantial positive correlation with the Marston test of personality.

Up to nine years of age children tend to draw from memory and prefer to sketch the human figure. After nine years of age they give more attention to correct representation of a variety of objects. These tendencies, of course, vary with the instruction they have had and the kind of stimulation of esthetic interest in their environment.

Children are more critical of their drawings in this period. They are now less easily satisfied with their results than they were in the primary period. They see how poorly they have translated on paper or canvas or with clay or other media the glimpses of beauty that have come to them. Hence, many children's artistic careers end in this period. There is no social pressure that requires drawing ability. The average adult is not ashamed to admit he cannot draw. A child doing good work in other subjects rarely fails to be promoted on the basis of deficiency in drawing. Since slight pressure is put on ability to draw, children tend to stop trying if the results they have obtained are unsatisfactory to themselves and have been criticized by others. The teacher may help the child over this drawing plateau by (1) instructing him in the use of materials, so that he will see that he is really gaining in technique, (2) acquainting him with some art that is a little better but not too much better than his own, (3) discussing with him the principles of design and color, (4) encouraging his successful attempts, and (5) criticizing his work in a constructive and friendly way.

Artistic effort should not be allowed to decline in this period. It may be directed into many avenues, such as lettering, making posters, decorating articles of furniture or clothing, designing costumes, and drawing maps and diagrams. Art work in the schools should give the pupils pleasure in creating pictures and designs, appreciation of beauty in everyday surroundings, as well as a clearer perception of form, line, and color in natural objects, pictures, and articles

of practical use. Moreover, cases of exceptional artistic ability and vocational aptitudes in this field should be discovered and developed.

Modern art courses rightly emphasize appreciation of beauty in everyday life—in dress, in houses and house furnishing, in city planning and gardens. One major objective of art education is to build a more beautiful America.¹⁵ This objective is for every pupil. As a consumer of art he should be interested in art processes as well as in the products which he purchases with good taste and judgment. The talented pupil who will produce the art of the future should be discovered and have varied technical experience which will lay a good foundation for the specific work in which he will specialize eventually. The students gifted along this line should be placed in an environment in which they will have inspiration, freedom, and instruction.

LANGUAGE

Interest in language is still strong in this period. The vocabulary should increase rapidly and sentences should improve in grammatical correctness, terseness, and fluency.

Factors Related to the Development of Language.—The meaning of abstract words, such as *goodness*, *beauty*, *justice*, is difficult to acquire and to transmit because each individual's experiences have been different. A child's idea of *good* depends upon his experience with good persons. To some individuals the concept of beauty has come through nature; to others, through music; and to still others, through kinesthetic association. Schools have used symbols too extensively in place of experience and the organization of that experience. Such a derived understanding of symbols is less adequate than direct experience.

The child's language ability is related to both general intelligence and cultural background. His mental alertness determines the extent to which he will profit by the kind and quality of the language that he hears. It has been estimated that there is a difference in linguistic develop-

¹⁵ Norton and Norton, pp. 443-469.

ment equivalent to about eight months between the children of the upper social classes and those of the lower social classes. A ten-year-old child who in early childhood has acquired incorrect habits of speech which are inappropriate for his present environment is definitely handicapped. One intelligent youngster developed two languages, one for use in school and the other for use at home and on the street. In school he was marked *A* in oral English at the very time he was using such expressions as "I ain't got nothin'" out of school. Habits of wrong grammar and, to an even greater extent, habits of incorrect articulation are extremely difficult to eradicate once they have been firmly established.

The age of a child's associates likewise is related to his language development. In this respect younger children have an advantage. They gain a great deal from their conversations with older brothers and sisters whose language is in advance of theirs, but not too far above their level. Twins, lacking this stimulation, tend to be relatively retarded in language development. Occasionally, they fail to acquire adult language because they have developed a secret language which meets most of their social needs. Association with cultured adults is an important factor in the language development of older children.

The study of a child's language throws light on his total personality. The purpose for which he uses language—whether to attain social ends, or merely to communicate, or to express personal power, or to display his knowledge or self-importance is significant. The scope and precision of his verbal expression indicates his habits of thought. The answers he makes to questions and his spontaneous remarks give adults an idea of the way the world appears to him. Thus, language reveals the personality to a remarkable extent.

Growth of Vocabulary.—During these preadolescent years the child's vocabulary should grow in size, vividness, and precision. It has been estimated that six-year-old children, on the average, have a vocabulary of approximately 2,500 words. The vocabulary estimated from the Binet test

is 5,400 words for ten-year-old and 7,200 for twelve-year-old children. Cuff¹⁶ reported the following vocabulary for children in different grades, as measured by his vocabulary test:

<i>Grade</i>	<i>Cases</i>	<i>Vocabulary</i>
3	117	7,425
4	120	10,395
5	117	12,460
6	104	13,965
7	99	14,910
8	96	16,800

A more rigorous test of vocabulary knowledge is that of formulating adequate definitions of the words. An unusually bright boy of nine years has been known to give satisfactory definitions of 6,000 words; a boy of ten, 10,000. These, however, are exceptional cases. Many textbooks now in use in the first three grades carry a vocabulary load of 5,000 different words. It is evident from a study of the words used by children in written composition and in oral speech that the vocabulary they actually use is far below these estimated vocabularies and that there is a wide gap between the words they know and the words they use. On a fifteen-minute free-association test¹⁷ a steady increase was observed from an average of seventy-three words for second grade children to 191 for children in the eighth grade. Both the number of words recognized and the number of words used increases at least until mental maturity.

As the children grow older, the percentage of nouns and interjections in their conversations tend to decrease, with a corresponding increase in the percentages of verbs, adverbs, adjectives, pronouns, prepositions, and conjunctions. Unfortunately, the language of older children tends to be less concrete and vivid than that of little children, although what is lost in picturesqueness may be gained in clarity.

It seems to be easy for children of these ages to acquire new words as well as to learn new facts in geography and

¹⁶ Noel B. Cuff, "Vocabulary Tests," *The Journal of Educational Psychology*, XXI (March, 1930), 212-220

¹⁷ E. W. Dolch, "Grade Vocabularies," *The Journal of Educational Research*, XVI (June, 1927), 16-26

to memorize poetry. Their interest in a wide range of reading also is an important factor in increasing their vocabulary. In the primary grades the reading should deal largely with familiar experiences. In the fourth, fifth, and sixth grades the use of unfamiliar experiences and new words in the reading is advocated to increase the size and vividness of the vocabulary. Firsthand experiences, however, still contribute most to the vitality of a child's vocabulary.

Grammatical Correctness.—The *Charters' Diagnostic Language Tests*¹⁸ indicate a noticeable degree of progress, under typical school conditions, from Grade IV to Grade VI in correcting grammatical errors. In the "Miscellaneous A Test" consisting of a variety of errors, such as *He is badder than I, She dresses nice, I only need one pin in this dress*, the average number of sentences corrected in an accepted manner was 9.3 for grade IV, 11.6 for grade V, and 16.5 for grade VI. In another page of forty different errors, such as *I ain't got any, I don't want no more, Tain't true*, the average score in the third grade was only 7.9 sentences. In the fourth grade the score increased to 17.8; in the fifth, to 22.0, and in the sixth, to 27.3. In the test of incorrect usage of verbs containing such errors as *we was on time, we laid down last night, has the bell rang?*, there was likewise a marked improvement from Grades III to VII. The scores on the test of correct use of pronouns also increased.

Special Forms of Speech.—Secret languages such as "pig Latin" appear in this period. This interest in secret language might be sublimated into an interest in the study of a foreign language in these grades, if it is taught in such a way as to fit the children's level of maturity.

Slang is an undesirable form of expression which begins to appear in this period. "The rest of the gang uses slang" is to a ten-year-old sufficient reason for adopting it. Striking and unusual occurrences such as are met in the child's larger world demand expressive words. Forceful, vivid slang should be retained in the particular situations to which it

¹⁸ For Grades III to XII. Published by the Public School Publishing Company, Bloomington, Illinois.

is appropriate. It is a contribution to our contemporary language. No other words express so tersely the idea of being face to face with an insurmountable difficulty as the phrase "up against it." One way of combating slang is to help the children find expressive words to substitute for the overuse of silly expressions. For example, they should find forceful and more specifically descriptive words that can be used instead of *you're all wet, the cat's whiskers, bum, Oh boy!, hot stuff, it's the tops, it's a Lulu*, and the like. The kind of slang which should be prevented from gaining headway in this period is the kind which is ungrammatical, vulgar, or used indiscriminately on all occasions. By substituting expressive words for slang and uninteresting conventional expressions, a good start is made in enlarging and enriching the vocabulary and thus progressing beyond "the moron level of conversation."

Swearing is another undesirable language response which may make its appearance in this period. One undesirable result of swearing is a changed attitude toward the Deity. Young children use such words imitatively at first, probably without half understanding their meaning. If the words produce a startling, exciting effect on some adult, children tend to repeat the experiment. If the words are ignored, a child may drop them of his own accord. One day a preschool child walked into his father's room and called joyfully, "Well, Godandamn." His father was somewhat amazed, but after the usual greetings, he said, "Where did you hear 'Godandamn'?" "Jackie taught me to say it," the youngster told him. "What does it mean?" "Jackie says it means, 'Well, isn't this grand?'" After his father had suggested that he use the latter phrase, the small boy substituted it willingly for the one which had little meaning to him.

In the case of older children the most satisfactory treatment seems to be to make them feel that swearing is immature and inappropriate in certain situations rather than immoral. Children should learn to discriminate among types of speech and recognize when each is appropriate. There is church language, school language, home language,

play language. Expressive language, so long as it is not stereotyped, has its place in certain situations. But it is part of the individual's social adjustment to keep each type in its appointed place. One does not swear at school. On the other hand, one is not expected to keep uppermost in one's mind grammatically correct usage while playing tennis. The large amount of swearing among soldiers may be attributed in part to the high degree of nervous tension under which they serve. Civil life provides more varied outlets for pent-up feeling, such as vigorous physical activity and other forms of expressive speech. The boy should think of swearing not as something that distinguishes him as a man of the world, but as something entirely out of place and inappropriate in the majority of situations.

Creative Writing — According to the Binet test nine-year-olds can find rhymes for given words. According to reports of language activities in certain schools children in grades four to eight can write exceptionally good poetry and vivid prose.

The following poem was written by a twelve-year-old boy:¹⁹

SWALLOWS

The air is thick with swarms of swallows
 High among the clouds,
 Flying all in crowds;
 Up the hills and down the hollows
 Swarms of swooping, swerving swallows,

Burnished, dark blue, darting swallows,
 Sailing o'er the sea,
 Flying blithe and free;
 Every bird the next one follows,
 Swarms of flying, floating swallows.

—George R. (age 12). The Perse School, Cambridge, England

SPELLING

Beginning with the third grade, children write more letters, compositions, and reports of various kinds than previ-

¹⁹ Lucia Burton Morse, "Young Pegasus," *Progressive Education*, V (January-February-March, 1928), 51.

ously This activity necessitates ability to spell the words used, and incidentally motivates instruction in spelling.

Instruction in spelling should, first of all, be individualized and given in response to a felt need. It is fitting and natural that pupils should be initiated by learning to spell the words they will want to use To make note of the words individual children need to know how to write is one of the best ways of building spelling lists appropriate to the mental maturity of each pupil. Such lists may be supplemented and checked by standardized lists based upon scientific studies of words most frequently used in writing and those most frequently misspelled.²⁰

The successful speller, as described in one investigation,²¹ was systematic in his attack on words, looked discriminately at words, re-enforced his first impression by visualizing and vocalizing the words, and checked the accuracy of his spelling against the study list. He was eager to study and enjoyed it, concentrated well, showed good motor control, was good at writing, and showed initiative The poor speller, on the contrary, lacked self-direction and initiative, a systematic method of attack and organization. He tended to be careless and indifferent, and habitually mispronounced words Diagnostic and remedial methods help to detect specific spelling deficiencies and possible causes of the difficulties.²²

During this age period children may be expected not only to increase the number of words they can spell correctly but

²⁰ F S Breed, "The Words to Be Taught in Spelling," *Elementary English Review*, IV (April, 1927), 97-101.

W. H. Coleman, *A Critique of Spelling Vocabulary Investigation*. Greeley, Colorado. Colorado State Teachers College, 1931

J A Fitzgerald, "The Vocabulary of Children's Letters Written in Life Outside the School," *Elementary School Journal*, XXXIV (January, 1934), 358-370.

Ernest Horn, *A Basic Writing Vocabulary* Iowa City, Iowa: University of Iowa, 1926.

²¹ S Atkin, "The Learning Indices and Study Methods of School Children in Spelling." Unpublished Master's thesis, University of Minnesota

²² Arthur I. Gates and David H. Russell, *Diagnostic and Remedial Spelling Manual* A Handbook for Teachers New York Teachers College, Columbia University, 1937

also to take more and more responsibility for improving their spelling.²⁸ They should develop a better method of observing idiosyncrasies in difficult words and of attacking unfamiliar words by means of phonograms, analysis in terms of familiar words, and spelling rules. They should become increasingly responsible for making their own lists of words to be mastered and should acquire a "spelling conscience" which will deter them from letting misspelled words in their written material go unchecked. Acquiring these attitudes and habits of study is a more important accomplishment than memorizing a mere list of words.

READING

The intensive attention given to reading in the first three grades, in many schools, later begins to waver and gradually dies out. By the time the pupil reaches the end of the elementary school, active efforts to improve reading skills have ceased. This should not be. There is need of a systematic development of reading skills appropriate to each rung of the educational ladder from kindergarten to graduate school. Attention should be given to the readiness of individual pupils for each new step, and, all along the line, reading should be emphasized as a pleasure and a thought-getting process.

Reading for Different Purposes. — In addition to seeking sheer enjoyment from reading, children use reading in many other ways in the elementary grades. In geography and history they are required to read sometimes to get the main points, sometimes to learn detailed facts, sometimes to discover reasons why certain conditions exist, and to organize their knowledge around big problems. In other subjects they frequently need to read a number of books in order to prepare a report or to obtain facts with which to supplement class discussion. As they read they must learn to distinguish between important and unimportant facts. They must frequently read to find the answers to definite questions. In arithmetic, ability to read problems with comprehension is

²⁸ Norton and Norton, *op cit.*, p. 294.

an important factor in the successful solution of the problems. In English children should read a great deal for pleasure and appreciation. Each of these purposes demands a specific technic and requires a different rate of reading. After the fundamental skills are mastered, the child should pay special attention to acquiring skill in reading for different purposes. The teacher of every subject should give instruction in methods of reading her subject matter.

Reading Skills to Be Developed. — A graded list of specific reading abilities to be developed in each grade, appropriate to the pupil's stage of development and the activities engaged in has not yet been scientifically determined. However, for the postprimary grades the following skills have been suggested:

1. To find and be able to state the central thought of a selection.
2. To give facts and supporting details
3. To find facts to support or refute a certain point of view
4. To follow directions with reasonable speed and accuracy
5. To follow the sequences of related events
6. To find data with which to answer specific questions and otherwise be able to locate information.
7. To draw conclusions from materials read.
8. To discover problems for further study.
9. To enjoy esthetic values.
10. To select and evaluate material read.
11. To organize material read.
12. To evaluate readily and accurately which parts of the material read should be remembered and how it can best be kept in mind.
13. To extend one's experience and stimulate one's thinking
14. To comprehend material presented in the form of simple tables, graphs, and charts.
15. To develop permanent interests in reading.
16. To read as rapidly as is consistent with an adequate understanding of the material.

Oral Reading. — When it was discovered that at about the fourth grade the curve of silent reading rate begins to forge

ahead of the curve of oral reading rate, the danger of retarding progress by having pupils continue too long to read aloud was recognized. Thereupon, the pendulum swung to the opposite extreme of giving practically no attention to oral reading. The danger in this extreme reaction, in turn, was recognized, and oral reading is at present beginning to occupy its rightful place in the total reading program.

Oral reading has social value. It is a means of sharing one's enjoyment of reading with others. As a check on accuracy of reading it has definite diagnostic value. Without a check on comprehension, however, it may become merely an exercise in word pronunciation. Persisted in too long it encourages excessive vocalization and retards the rate of silent reading which forges ahead of oral reading during the fourth, fifth, and sixth grade. The slight increase in rate of oral reading from grade five to grade six indicates that children have almost attained their maximum speed in oral reading in this period. The eye movement habits of pupils in these grades in oral reading as compared with silent reading show that in number of fixation pauses per line—the factor that largely determines rate of reading—silent reading has the advantage. The backward, regressive movements, which likewise slow up the rate of reading, are about equally numerous in both oral and silent reading.

Silent Reading.—The large majority of adult reading is silent and for that reason alone deserves emphasis. On the school level a general estimate has been made revealing a rate of 150 words per minute for the third grade and 250 words per minute for the sixth grade. Average scores for rate and comprehension accompany every standardized reading test. Those specific scores for a given type of reading material are more meaningful than any average figures, for the rate of silent reading varies greatly with the kind of material and print, the child's interest in the material, the purpose for which he reads it, and his familiarity with the general field. Stories can be read more quickly than general science, and general science more quickly than problems in arithmetic.

It is not rate, however, but comprehension that should be emphasized. Effective methods of comprehending the thought of a passage should be stressed. The rate of recreational reading may be expected to improve throughout the elementary school, and new reading skills may gradually be acquired.

Individual Differences in Reading Ability.—Any reading test administered in any typical fifth grade class reveals a wide range of ability. Some children will be at practically the zero level of reading ability, others will be found at each grade level reaching up to adult proficiency. One pupil in ten seconds may read a passage for which another pupil requires two minutes. Consequently, he is able to complete in five minutes an assignment over which the other pupil may need to puzzle for an hour.

Individual differences in reading ability that are closely associated with general intelligence are not, in general, ironed out by instruction. After four years of almost constant remedial work, Hildreth²⁴ found that the reading achievement curves for seven children, while showing improvement in every case, maintained about the same rank in the group as at the beginning.

Favorite Books.—A number of studies have been made of children's reading interests,²⁵ which yielded evidence to

²⁴ Gertrude Hildreth, *Learning the Three R's: A Modern Interpretation*, pp. 350-351. Minneapolis, Minn.: Educational Publishers, Inc., 1936.

²⁵ Fannie W. Dunn (Chairman), *Materials of Instruction*. Eighth Yearbook of the Department of Supervisors and Directors of Instruction. New York Teachers College, Columbia University, 1935.

B. L. Johnson, "Children's Reading Interests as Related to Sex and Grade in School," *School Review*, XL (April, 1932), 257-272.

Arthur M. Jordan, *Children's Interests in Reading* (revised edition). Chapel Hill, North Carolina: University of North Carolina, 1926.

Thomas J. Lancaster, "A Study of the Voluntary Reading of Pupils in Grades IV-VIII," *The Elementary School Journal*, XXVIII (March, 1928), 525-537.

May Lazar, *The Reading Interests, Activities, and Opportunities of Bright, Average, and Dull Pupils*. New York: Teachers College, Columbia University, 1937.

Helen K. Mackintosh, *A Critical Study of Children's Choices in Poetry*. Studies in Education, Vol. 7, No. 4. Iowa City, Iowa: University of Iowa, 1932.

(Continued on next page)

show that during the elementary school years, reading interests develop with increase in age. The greatest changes occur in early adolescence.

Gates²⁶ has called attention to four important factors influencing a child's choice of books — the physical make-up of the book, the vocabulary burden, the type of content, and the literary character. Other things being equal, children of these ages prefer good clear print, action pictures, short paragraphs, and a reasonably small size. New and difficult words should be introduced gradually in a context of familiar vocabulary. The most interesting content appears to include surprise, action, animalness, conversation, children's humor, and plot. The kind of reading pupils in grades four to eight, especially boys, find most interesting is dramatic action, adventure, and heroic qualities. Fairy and supernatural elements decrease in interest in the latter part of this period. "Interesting repetition" and "availability for dramatization" — qualities which have high interest value in the primary grades, — seem to make less appeal after the third grade.

SELECTED READING LIST FOR PREADOLESCENTS

- ANDERSEN, HANS CHRISTIAN *Andersen's Fairy Tales* (James edition). Newly translated from the Danish by M. R. James, O M, Provost of Eton. With 24 illustrations in color by Christian Jackson. Philadelphia, Pa. J. B. Lippincott Co., 1931, \$3.00, 466 p.
- BACON, PEGGY *Mischief in Mayfield* New York. Harcourt, Brace and Co., 1933, \$1.75, xi + 177 p.
- BARRIE, JAMES M. *Peter and Wendy* Illustrated by F. D. Bedford. New York. Charles Scribner's Sons, 1911, \$2.50.

Paul McKee, *Reading and Literature in the Elementary School*, Chapter 13 Boston: Houghton Mifflin and Company, 1934.

Lewis M. Terman and Arthur I. Gates, *Children's Reading* (second edition) New York: D. Appleton and Company, 1931.

Willis L. Uhl, *The Materials of Reading*. New York: Silver Burdett and Company, 1924.

C. W. Washburne and L. Vogel, *Winnetka Graded Book List* Chicago: American Library Association, 1926.

²⁶ Arthur I. Gates, *The Improvement of Reading*, op. cit.

- BIANCO, MARGERY WILLIAMS *All About Pets*. Decorations by Grace Gikison New York The Macmillan Co., 1929, \$2 00, viii + 134 p
- CARROLL, LEWIS *Alice's Adventures in Wonderland* (The Little Little Library) Illustrated by John Tenniel. New York The Macmillan Co., 1932, \$1 00, xv + 200 p
- CHISHOLM, LOUIS (Editor) *The Golden Staircase* New York G. P. Putnam's Sons, 1933, \$2 50, 195 p
- COATSWORTH, ELIZABETH *Alice All by Herself*. New York. The Macmillan Co., 1937, \$2 00
- *The Cat Who Went to Heaven*. New York: The Macmillan Co., 1931, \$2 00, 57 p
- COLLODI, C *Pinocchio* New York The Macmillan Co., 1927, \$1 00, xv + 220 p
- COLUM, PADRAIC *The Children's Homer* New York The Macmillan Co., 1925, \$2 00, 254 p
- DALGLIESH, ALICE (Compiler) *Christmas, a Book of Stories Old and New* New York Charles Scribner's Sons, 1934, \$2 00, viii + 232 p
- DEFOE, DANIEL. *Robinson Crusoe* New York Harper and Brothers, 1920, \$1 50, 368 p
- DRIGGS, HOWARD R *The Pony Express Goes Through* New York. Frederick A Stokes Co., 1935, \$2 50, xvi + 208 p
- DUKELOW, JEAN H., and WEBSTER, HANSON HART. *The Ship Book* Decorated by Manning de V. Lee New York Houghton Mifflin, 1931, \$2 00, xii + 280 p
- FIELD, RACHEL Hitty *Her First Hundred Years* New York The Macmillan Co., 1930, \$2 50, 222 p.
- (Compiler) *American Folk and Fairy Tales*. New York Charles Scribner's Sons, 1929, \$2.50, xvi + 302 p
- FINGFR, CHARLES J *Courageous Companions* New York: Longmans, Green and Co., 1929, \$2 50, 304 p
- FULLER, RAYMOND T *Along the Brook, What You Find There, and How to Name It*. New York: John Day Co., 1931, \$1 25, viii + 81 p
- GRAHAME, KENNETH *The Wind in the Willows* New York: Charles Scribner's Sons, 1933, \$1 00, 314 p
- HARTMAN, GERTRUDE. *These United States and How They Came To Be* New York The Macmillan Co., 1932, \$2 50, vi, 335 p
- HAWTHORNE, NATHANIEL. *A Wonder-Book*. New York: Duffield and Green, 1929, \$2 50, 370 p.
- HILLYER, V. M *A Child's Geography of the World* New York: D Appleton-Century Co., 1929, \$2 00, xvii + 472 p
- HOFFMAN, ELEANOR *Melika and Her Donkey* New York: Frederick A. Stokes Co., 1937, \$1.75.

- HOLLING, HOLLING C. *The Book of Indians*. New York: Platt and Munk Co., 1935, \$1 25, 11-125 p
- JOHNSON, MRS. MARTIN. *Jungle Pets*. New York: G. P. Putnam's Sons, 1932, \$2 00, vii + 215 p
- KIPLING, RUDYARD. *The Jungle Book*. Garden City, N. Y.: Doubleday Doran Co., \$2 50, xiii + 305 p
- LAMBERT, CLARA. *Talking Wires*. New York: The Macmillan Co., 1935, \$2 00, 72 p
- LOFTING, HUGH. *The Story of Dr. Dolittle*. New York: Frederick A. Stokes Co., 1920, \$1.50, viii + 108 p
- MCCREERY, JAMES LINDSAY. *Exploring the Earth and Its Life in a Natural History Museum*. New York: Frederick A. Stokes, 1933, \$2 00, vii + 262 p
- MEIGS, CORNELIA. *Wind in the Chimney*. New York: The Macmillan Co., 1934, \$2 00, 144 p.
- MOON, CARL. *Painted Moccasins*. New York: Frederick A. Stokes Co., 1931, \$2 50, 318 p
- MOORE, ANNE CARROLL. *Nicholas and the Golden Goose*. New York: G. P. Putnam's Sons, 1924, \$2 00, xx + 331 p
- MULOCK, DINA MARIA (MRS. CRAIK). *The Adventures of a Brownie*. New York: The Macmillan Co., 1924, \$1 00, 149 p.
- PALGRAVE, FRANCIS T. *Children's Treasury of Lyrical Poetry*. New York: The Macmillan Co., 1926, \$1 40
- SAWYER, RUTH. *Roller Skates*. New York: Viking Press, 1936, \$2 00, 186 p.
- SHERMAN, H. A., and KENT, C. F. *The Children's Bible*. New York: Charles Scribner's Sons, 1925, \$1.75, xx + 419 p
- SMITH, SUSAN. *The Christmas Tree in the Woods*. New York: Minton, Balch and Co., 1932, \$1 50.
- SPYRI, JOHANNA. *Heidi*. New York: Houghton Mifflin, 1923, \$2 00. Also New York: Garden City Publishing Co., 1932, \$1.00, 319 p.
- STEVENSON, BURTON E. *Home Book of Verse For Young Folks*. Garden City, N. Y.: Doubleday Doran Co., 1932, \$2 50, xxviii + 50 p.
- STEVENSON, ROBERT LOUIS. *A Child's Garden of Verses*. New York: The Macmillan Co., 1927, \$1 00, 121 p
- TRAVERS, P. L. *Mary Poppins*. New York: Reynal and Hitchcock, 1934, \$1 50, xii + 206 p
- UNTERMAYER, LOUIS (Compiler). *This Singing World*. New York: Harcourt Brace, 1926, \$2 50.
- WIESE, KURT. *The Chinese Ink Stick*. Garden City, N. Y.: Doubleday Doran Co., 1929, \$2 00, vi + 199 p
- YOAKAM, GERALD A., BAGLEY, WILLIAM C., and KNOWLTON, PHILIP A. *Reading to Learn Series, Books One, Two, and Three*. New York: The Macmillan Co., 1935-1937.

For slow readers the Thorndike Library, D. Appleton-Century Com-

pany, which consists of children's classics simplified in vocabulary and sentence structure, will be found very valuable. The Thorndike Junior Dictionary, Scott-Foresman and Company, should be available to every elementary school child.

Amount of Reading — Theory and practice agree in emphasizing the importance of "just reading" in order to improve one's reading ability. This emphasis is epitomized in the following twelve rules for reading outlined by an early New England settler:

1. Read
2. Read
3. Read some more.
4. Read anything.
5. Read about everything.
6. Read enjoyable things.
7. Read things you yourself enjoy.
8. Read, and talk about it.
9. Read very carefully some things.
10. Read on the run, most things.
11. Don't think about reading, but
12. Just read.

Experimental work likewise bears witness to the efficacy of extensive reading of interesting material in building good reading habits.

During the years prior to adolescence children generally do more voluntary reading than at any other age. This interest in wide reading should be encouraged. Some teachers are skilful in finding intriguing passages to read to pupils which send them out eagerly to get and read the book. Others encourage children to stimulate one another's interest in the books they have read. Still others make a special effort to provide supplementary popular books in the fields of science, travel, social studies, and mathematics. In schools in which interest in voluntary reading has been stimulated, children read large numbers of books with a gratifying increase in rate and comprehension. A large amount of relatively simple material covering many fields develops better reading habits than a small amount of difficult content.

CHILDREN'S HUMOR

Not a great deal is known about the sense of humor in general and still less about the objects or situations that ten-year-old children find amusing. One group of seventy very poor children from ten to thirteen years of age²⁷ were asked to write an account of the funniest thing that "they had heard, read, or directly experienced." Fifty-three per cent mentioned street experiences having an element of grotesqueness, such as clowns, minstrels, and performing animals, especially monkeys. Thirty per cent mentioned motion pictures of the kind in which one accident follows another in rapid succession. Novelty is amusing. One child wrote, "It was the first time I saw an elephant, so I laughed."

The majority (83 per cent) of a group of seventy-seven well-to-do children of the same ages related trivial and commonplace jokes. None quoted from any of the great humorous writers. One metaphysically minded eleven-year-old girl wrote, "I think the funniest thing was that I was taught that God is everywhere, for if He is everywhere He would be fat and thin and long and wide."

The things a child believes to be funny are significant. They may give considerable insight into his personality. Teachers and parents who are able to enter into the child's world of amusing happenings have established a real bond of sympathy and understanding.

ARITHMETIC

When the child enters the fourth grade, his knowledge of the fundamental computations and the language of arithmetic, and also his ability "to apply thinking in situations involving number" should be inventoried. No new structure can be erected save on a firm foundation, and, if this foundation is lacking, the first task is to supply it. The teacher should ascertain the individual needs and abilities of his pupils and, as at all ages, begin instruction at the

²⁷ I. Lawrence, "Children's Humour," *The Journal of Experimental Pedagogy*, II (June, 1914), 330-334.

level of their proficiency. Losses in proficiency that have occurred during the vacation must be made up and practice provided for each new step.

Multiplication deserves major attention during the fourth grade.²⁸ Division combinations, fraction forms, and the simplest fraction problems should be part of the curriculum. Practice in solving problems of real life involving addition, subtraction, and multiplication is necessary to develop the child's ability to think in arithmetical terms. Number needs in this grade are numerous. There are lunch orders to be filled, the mechanical details of trips to plan, height and weight charts to keep, computations to be made for construction planned to improve the school, the cost of parties to be estimated, and many other activities involving number work.

Toward the end of the fourth grade and at the beginning of the fifth grade the equation form and process signs may be introduced. Practice in the fundamental processes and problem solving is continued, the study of division receiving special emphasis. Habits of work are as important as specific skills. At this stage children should be able to teach themselves and set definite goals for themselves toward which to strive in speed and accuracy.

In the sixth grade review is needed on the four fundamental processes in order to remove deficiencies; practice is necessary to maintain the desired standards of proficiency. Long division will be introduced as an outgrowth of practice in short division in long form; more difficult work with fractions will be undertaken; and more complex problems will be solved.

The seventh and eighth grade likewise represent no sharp break in arithmetic sequences. Practice in processes previously introduced is given on the basis of an initial inventory of the pupil's achievement. Decimals and percentage work are introduced in connection with practical problems of the classroom and home. Problems in graph form are an excel-

²⁸ Gertrude Hildreth, *Learning the Three R's*, pp. 178-185. Minneapolis, Minn.: Educational Publishers, Inc., 1936.

lent prelude to algebra. This newly acquired arithmetic ability is needed in budgeting time and money, keeping accounts, and studying financial problems in connection with the social sciences

THE SOCIAL SCIENCES

It is usually assumed that nine- to twelve-year-old children have an avid interest in facts. Certainly, the accurate knowledge some ten-year-old boys possess about airplanes, automobiles, and practical science puts many an adult to shame.

The results of tests indicate the increase in knowledge of geographical facts which may be expected in this period. In historical and scientific knowledge there should also be a marked advance. Accompanying the increase in knowledge should be an advance in solving problems, seeing relationships, and making application to present conditions. These abilities are ends to which the acquisition of facts is only a means. Reeder²⁹ suggested two ideas which should be dominant in the teaching of geography: (1) the building of permanent interests and (2) the recognition of causal relationships.

The most vital problem in connection with the social studies is: What facts should be taught? Recent reports of commissions concerned with this problem³⁰ emphasize the basic importance of studying the contemporary social scene — its “shift from individualism in economy to corporate or social action,” from “an economy of scarcity toward one of plenty,” its “rapid changes in occupational demands, and results of technological unemployment.” The social studies in grades four to eight should contribute to the pupil’s understanding of his role in the world today.

Research in the social sciences, as in spelling and arithmetic, has resulted in the policy of reducing the number of

²⁹ Edwin H. Reeder, “Spirit of Modern Geography Teaching,” *Teachers College Record*, XXVIII (January, 1927), 445-452

³⁰ Norton and Norton, pp. 163-215. See also Rolla M. Tyron, *The Social Sciences as School Subjects*. Report of the Committee on the Social Studies, American Historical Association, Part XI. New York: Charles Scribner’s Sons, 1935

items to be learned to a smaller number of minimum essentials. One investigation limited the number of important foreign cities to be studied. Another group of researches attempted to ascertain the facts in history, geography, and civics that are indispensable in order to read periodicals and books intelligently. An analysis of textbooks showed which facts, dates, topics, and problems were considered most important by writers of textbooks. The consensus of "expert" judgments was used to check further the list of minimal essentials. Although some of these methods of determining minimal essentials are open to criticism, the effort to provide a "map of values" which is not cluttered up by insignificant detail is commendable. Parallel with this elimination of dead wood a trend is noticeable to devote more time to social studies in grades four to six and to make all work in school social training.

INTELLIGENCE

A child's intelligence is revealed by his "way of responding to problem situations." Within the limits set by heredity, it develops in response to appropriate stimulation. If a child continually functions below his potentialities, his intelligence quotient as now measured may decline. If, on the other hand, he is stimulated to his optimum of effort, an apparent increase in intelligence is noted. Some individuals are robust, others flabby in the use of their mental ability.

Manifestations of Intelligence. — Intelligence of nine- to twelve-year-old children is indicated by their ability to detect absurdities and to see significant elements in a situation, by the sensible answers they give to questions, their success in understanding the precise meaning of words and in defining abstract words, their power to detect verbal and mathematical relationships and make generalizations, their use of language, and the possession of such information as might be acquired by an alert mind in daily contact with things and persons. These are attributes of educability. They constitute what is commonly called intelligent behavior.

It is difficult to hoodwink ten- and eleven-year-old chil-

dren They detect absurdities that a primary child would accept without question.

Ten-year-old children can give sensible reasons why children should not be too noisy in school and why most people would rather have an automobile than a bicycle This is one of the tests on the ten-year-level of the new revision of the Stanford-Binet test Children's thinking is like that of adults in many ways When confronted by a strange phenomenon they seek to explain it in terms of their previous experience and information When these conflict with the observed fact, they must either abandon or adhere to the cherished principle. Because children's experiences and information are more limited and because they have had less practice in discovering relationships and less ability to deal with abstractions, their explanations tend to be more diverse, more inconsistent, and more contradictory than the explanations of adults

It is well known that young children think in concrete terms and later develop an appreciation of abstract ideas. When children in the primary grades are asked to write any twenty-five words that occur to them, they are likely to list the names of persons they know and objects in their environment When asked to write anything they wish on certain topics they are again likely to describe concrete actions and happenings. With increasing age thinking becomes more abstract, acquires wider content, and, at the same time, is more "detailed and disciplined" One of the notable advances made from the ninth to the twelfth year is in the ability to define abstract words. Average ten-year-old children cannot give a satisfactory definition of *revenge*, *justice*, *pity*, *charity*. They usually think in concrete terms. But twelve-year-old children will tell you that revenge means "to get even with someone," that justice means "to give people what they deserve," that to pity means "to be sorry for someone," and charity consists in helping "those who are needy."

Seeing relationships is another characteristic of the higher thought processes. During this period children think in

terms of simple relationships. At least 50 per cent of eleven-year-old children recognize that a snake, cow, and sparrow are alike in that they "all are animals" or "all move."³¹

Interest in puzzles is said to culminate in this period. Many puzzles are good problems in reasoning, and the puzzle interest should be encouraged as an absorbing activity.

Memory definitely is a factor in intelligent behavior. Intelligence tests rightly involve memory ability. At least half of any group of ten-year-old children may be expected to repeat six digits that have just been pronounced distinctly and with uniform emphasis. At eleven years of age children may be expected to repeat without errors sentences of approximately twenty syllables.³²

Words are the medium of memory more frequently than images. It has been suggested that visual imagery tends to play a small part in recall, and increasingly so as the child matures.³³

Memory, however, is not mere mechanical recall. It involves an active translation of the material into one's own preconceived scheme of things. The part of a story that is best remembered tends to be its center of activity or its social setting. Children from different social groups changed unfamiliar names and idioms in a story to more familiar ones.³⁴ Usually, they recast the story to make it revolve about a general outline or detail which was highly meaningful to them. Each group tended to select material which was familiar and significant in its own social background. Material "difficult" to remember for a particular child is material foreign to his "psychological field." The child tends to replace such material by something within his previous experience.

³¹ Lewis M. Terman and Maude A. Merrill, *Measuring Intelligence*, pp. 265-266. Boston: Houghton Mifflin Company, 1937.

³² Lewis M. Terman and Maude A. Merrill, *op cit*, p. 109.

³³ A. M. Jenkin, "Imagery and Learning," *British Journal of Psychology*, XXVI (October, 1935), 149-164.

³⁴ M. L. Northway, "The Influence of Age and Social Group on Children's Remembering," *British Journal of Psychology*, XXVII (July, 1936), 11-29.

Thorndike's experiments³⁵ do not support the statement frequently made that the memory of children of these ages is superior to that of adults. It is not certain, therefore, that the fourth, fifth, and sixth grades are especially good places on the educational ladder at which to memorize poetry and Bible verses, and to acquire a wealth of facts in history, geography, and general science. In any event rote memory should not be emphasized at the expense of practice in reasoning and the organization of knowledge.

Growth in Intelligence. — From eight to fifteen or sixteen years consecutive measurements of the intelligence of the same children have indicated only a slight decrease in the rate of intellectual growth. Growth continues up to about twenty years of age. The growth curves of boys are practically identical with those of girls. Individual curves, however, differ markedly in form, and comparatively few conform closely to the average.³⁶

Evidence regarding a difference in mental growth between bright and dull children is not entirely consistent. Superior children may show increases or decreases in their intelligence quotient depending upon the particular individuals studied, their age, the test used, and the method of calculating the intelligence quotient. In three major studies of this question³⁷ the girls showed a larger decrease in intelligence quotients than the boys. Subnormal children tend to decline in intelligence quotient from nine to fifteen years of age.

A change in mental organization appears to occur with increasing age.³⁸ At twelve years of age the results of four verbal and three numerical tests were more closely related than at nine years. There is a similar systematic decrease in the amount of relationship between a number of psycho-

³⁵ Edward L. Thorndike, *et al.*, *Adult Learning*, pp. 159-165. New York: The Macmillan Company, 1928.

³⁶ Frank N. Freeman, "Intellectual Growth of Children as Indicated by Repeated Tests," *Psychological Monographs*, XLVII, No. 2 (1936), 20-34.

³⁷ Lois H. Meek and Arthur T. Jersild, "Mental Development from Two to Twelve Years," *Review of Educational Research*, VI (February, 1936), 17-48.

³⁸ S. E. Asch, "A Study of Change in Mental Organization," *Archives of Psychology*, XXVIII (March, 1936), 195.

logical performances over a period of time. It is probable that specific conditions cause the formation of various patterns of organization.

Nonacademic Children.—Not all children are equally educable. Children with low learning ability are found in significant numbers in elementary school. It has been estimated that approximately 15 to 18 per cent of elementary children fall in the dull normal group, having intelligence quotients between 70 or 75 and 90.

Teachers can recognize marked mental retardation even though they cannot accurately estimate the intelligence quotients of an entire class of children. Among 592 children referred by teachers to the psychological bureau because of suspected feeble-mindedness, the results of the Binet test showed 51 per cent to be feeble-minded, 46 per cent to be border line, and only 3 per cent above the borderline level³⁹

Mental defect appears to be associated with a constellation of factors: retardation in traditional school systems, mentally defective brothers and sisters, oversuggestibility, preference for younger children as playmates, slow or dull manner, and being a target of teasing by other children. The vocabulary of mental defectives is markedly below normal. Morons, on the average, fall below their chronological peers even in tests of mechanical ability, although some of the group make high scores.

Even in practical nonabstract types of work mentally deficient children are characterized by limited attention, limited use of experience, a poor understanding of interrelations of the processes in their work, and a narrow technical horizon even in lines of work in which they are highly interested. On the other hand, because they work less intensely than normal children, they do not fatigue so easily. Mentally defective children find concentrating on their work increasingly hard as it becomes more difficult. These characteristics should be recognized and taken into account in their instruction.

³⁹ J. Schwarz [Estimation of Intelligence], *Psychometrika*, I (1931), 17-30.

Gifted Children — One parent said that she hoped her child would not have a very high intelligence quotient. There is some reason for making such a statement. Children with Binet intelligence quotient above 150 have many problems of adjustment which tax even their high degree of insight and adaptability. With reference to these very gifted children Hollingworth mentions as two important problems of education

how to provide against alienation from contemporaries of both sexes, and how to prevent the negativism that results from continuous living under inefficient or unreasonable authority ⁴⁰

The "optimum" range of intelligence for good all-round adjustment appears to be between 130 and 150 I.Q.

ATTITUDES AND INTERESTS

The real attitudes of preadolescent children are difficult to measure. Although studies in deceit have shown little growth in moral behavior under certain environmental conditions, the tests used cannot be considered adequate measures of the qualities in question. Apparent arrest in character development may be inherent in the tests used rather than an arrest in the development itself.

Moral Judgment. — It is probably not until early adolescence that children gain an intellectual insight into moral questions. In the primary grades they are likely to see the situation involving moral judgment rather vaguely as a whole or to pay attention to certain particularly striking features of it. In the intermediate grades their judgments become more finely drawn and they take into consideration a larger moral field. There are wide individual differences in the development of moral judgment resulting from differences in intellectual development, experiences, social environment, and the habits and attitudes that grow out of these varied conditions.

Prejudice is learned or caught from others. A tolerant

⁴⁰ Leta S. Hollingworth, "The Development of Personality in Highly Intelligent Children," *Yearbook of the Elementary School Principals*, XV (July, 1936), 272-279

attitude may be built by a knowledge and understanding of people of different races and socio-economic status. One twelve-year-old girl who was invited to have dinner with a Chinese student in this country said afterward, "I always thought Chinese were horrid but Miss H—— is lovely."

Can Attitudes Be Taught?—The few investigations prompted by the question, "Can attitudes be taught?" have yielded inconclusive results. Lichtenstein,⁴¹ in addition to reviewing the literature, reported an original research in grades four to six. Two attitudes were involved in his investigation—appreciation of outdoors and the so-called scientific attitude as manifested in responsibility for suspended judgment and willingness to change one's judgment on the basis of evidence. Although superstitions were significantly reduced by the experimental procedure, social attitudes, scientific attitudes, and preference for movies over out of doors were not affected by the instruction. All that can be said is that under certain conditions certain attitudes can be changed. Motion pictures appear to be a particularly successful means of changing certain attitudes both in the direction of more desirable standards and in the direction of less rigid standards. *The Birth of a Nation*, for example, was found to improve children's attitudes toward the Negro. Some of the changes in attitude persisted for ten weeks or longer, before they were replaced by old ways of thinking and feeling.⁴²

The radio is another potentially powerful influence. There has been too much general criticism of children's radio programs, rather than specific constructive criticism. More praise should be bestowed on the good programs. It should be recognized likewise that to improve tastes is not easy and must be attempted gradually.

If attitudes are an important dynamic factor in behavior, schools should develop this phase of education. They should

⁴¹ Arthur Lichtenstein, *Can Attitudes Be Taught?* Johns Hopkins University Studies in Education, No. 21. Baltimore: Johns Hopkins Press, 1934.

⁴² Ruth C. Peterson and L. L. Thurstone, *Motion Pictures and the Social Attitudes of Children*. New York. The Macmillan Company, 1933.

be sure that desirable attitudes are being acquired at the same time that the students grow in knowledge

Interests. — Trends in interest from age to age have been studied to a greater extent than the way in which interests function in the lives of children. The same underlying interest may be manifested in different ways. As a child matures, his medium of expression varies and

the energy expressed as "interest" is poured successively into different molds related to the same drive ⁴³

Superstitious Beliefs — Elementary school children believe many popular superstitions. In general, younger pupils accept more superstitions than older pupils; girls, more than boys. Many of their erroneous beliefs are acquired through friends. Several groups studied did not seem to lose many of their unfounded beliefs as a result of their education or their maturity.

SOCIAL CHARACTERISTICS

Children early become aware of other persons. They are sensitive to prestige, ridicule, and social status long before they can express themselves on these points. In the pre-school years fear of failure, embarrassment, and loss of prestige begin to be evident and tend to increase in many environments. During preadolescent years, with sufficient environmental stimulation, team spirit, class spirit, and gang loyalty may be developed.

The word *gang* has an unsavory connotation which appears to be justified. Thrasher ⁴⁴ pointed out that the gang appeals to boys as an escape from humdrum existence and insofar as it does furnish excitement and adventure, it makes adjustment to adult routine existence difficult. Thus, it has a demoralizing effect rather than a constructive socializing effect. Boys' Clubs, if substituted for Boys' Gangs, would meet the boys' need for adventure and, at the same

⁴³ Jones and Burks, *op cit*, p. 66

⁴⁴ F. M. Thrasher, *The Gang: A Study of 1313 Gangs in Chicago* (second edition). Chicago. University of Chicago Press, 1936

time, be a constructive influence in helping children to adjust to and, in some small way, to reconstruct society.

Rivalry appears in true competitive form by the end of the preschool period, and, in our present culture, competitiveness runs through many activities of preadolescents. In one investigation it was shown that children of these ages tended to be more efficient when working for themselves than when competing for their class. They did better work, however, in competing for their class than when working alone without special incentive.

Progressive education hopes to substitute habits of co-operation for habits of competition. In our culture we encourage competition by many methods. It is almost absent in some primitive societies and strong in others. If every child recognized that he is good at some tasks, even if poor at others, he might not feel a strong incentive to compete with others. If he were sensitive to other children and realized that they do not like to be made to feel inferior any more than he does, he might refrain from competition with them. Social imagination which helps one to put himself in the other person's place should be developed. A recognition of relative standing in a group should be possible without accompanying habits of competition. With such a point of view an individual would do work for its own sake rather than for the purpose of demonstrating his superiority over someone else.

In the nursery school and even in the primary grades boys and girls tend to play together. A separation of interests usually occurs at about the age of eight to ten years. Boys and girls tend to play less together and have divergent interests. Mixed children's parties at these ages are frequently a howling failure. There may be open teasing and antagonism. They prefer companions of the same sex and, increasingly, of approximately the same age. The attraction of the sexes for one another does not reappear to any appreciably marked extent until early adolescence. Nevertheless, even during this period they are aware of their popularity or unpopularity with the opposite sex.

During the period when boys and girls are making their social adjustments to one another, they tend to avoid adult supervision. They want to work out their social relationships for themselves and to be accepted by the group on their own merits. A solicitous teacher or parent cannot bestow the gift of popularity on any boy or girl. It must be achieved. Children of these ages frequently show indifference to social conventions and impatience with the little acts of politeness which seem to have no reason for their existence. The attitude of independence toward social customs and those who enforce them is one source of conflict.

Leadership becomes more prominent during these years. The preferred leaders usually appear to be superior (but not very superior) to the group in intelligence, somewhat extroverted, lively, courageous, and physically superior. Children who are gentle, friendly, and charming frequently become a center of attraction, though they are not likely to be placed in positions of leadership.

Children in these grades show positive and negative attraction for one another. Moreno,⁴⁵ by a simple technic of asking school children to name two of their classmates next to whom they would like to sit, was able to draw "sociograms" showing the network of attractions and repulsions existing within groups. In the fourth grade and the years following an increasing proportion of mutual pairs of friends and an increasing complexity in interrelations became evident. At the same time there was an increase in "unattached" children. After thirteen years of age, there were numbers of children isolated from other members of the group because of attitudes which members of the group had formed with respect to one another.

EMOTIONAL DEVELOPMENT

Increased emotional control may be expected during this period. Fears should decrease; caution increase. All kinds

⁴⁵ J. L. Moreno, *Who Shall Survive? A New Approach to the Problem of Human Interrelations*. Washington, D. C.: Nervous and Mental Diseases Publishing Company, 1934.

of daring stunts are performed. How to retain the spirit of adventure and at the same time to eliminate serious danger is a problem. Its solution depends on having a gradation of adventures from the early preschool period. A child who has climbed little ladders and fences when three years old, and who has been free to climb in higher and more difficult places from year to year, should have acquired skill in climbing and a knowledge of the things he can do without hurting himself. Fear of failure, of ridicule, of being called a sissy is often much more intense than fear of physical injury. Shyness and diffidence, however, may increase with increasing secretiveness. The nine- or ten-year-old child frequently keeps an adult guessing as to what he is really thinking and feeling.

Some of the tension caused by a disturbed social relationship with parents or siblings may disappear at school age and the feeling of jealousy may be quite successfully concealed. The teacher becomes a parent surrogate. Underneath an indifferent exterior a child may be sensitive to his status with his teacher and desire recognition from her. He may be deeply hurt by criticism or being unfavorably compared with another child. A child who is rejected both at home and at school may suffer in silence or behave rebelliously and defiantly. Although unable verbally to express their emotional problems, children may nevertheless be conscious of their status and be emotionally disturbed. Even when parents and teachers do not make any disparaging remarks, the child may still be quite conscious of his shortcomings.

Temper tantrums decrease as children acquire more subtle or effective methods of getting what they want.

The goal of education in this area is not the elimination, but the modification of emotion.⁴⁶ Emotional patterns underlie and give color to all of life. Moods motivate individuals toward certain lines of behavior.

⁴⁶ Daniel A. Prescott, *Emotion and the Educative Process*. Washington, D. C.: American Council on Education, 1938.

QUESTIONS AND PROBLEMS

1. Why can no hard and fast line of demarcation be made between periods of development?
2. What kinds of games do boys and girls of these ages whom you have observed like to play?
3. What additional motor skill may be expected?
4. What development in writing, drawing, written and spoken language, and arithmetic may be expected?
5. Why should more time be spent on silent reading than on oral reading?
6. How many children whom you have observed have been interested in making collections? What kind of things did they collect?
7. Give examples of reasoning observed in children of these ages. What was the stimulus to reasoning? What facts were used in the process? What caused errors in the conclusions?
8. How can you account for differences among children in social behavior, interests, attitudes, moral judgment, emotional patterns? Try to account for the development of these qualities in some children whom you know very well.

CHAPTER XIX

LEARNING IN THE POSTPRIMARY- PREADOLESCENT PERIOD

Learning should be an adventure. It is the joyous outcome of a favorable school environment. When the curriculum fits the child and the child fits the curriculum, and when the instruction is astute and the guidance wise, the child learns. The school has the stimulating and dynamic function of developing better individuals as well as technically trained children. Hence, the acquisition of technics alone is a false standard upon which to judge the accomplishments of a child or the worth of a school.

The Role of the Curriculum in Learning.—The curriculum, broadly interpreted, includes the materials, equipment, and experiences which adequately meet the physical, mental, social, and emotional needs of children of a particular stage of development. These factors also stimulate their interest and effort along the lines of desirable achievement. Through a graded succession of experiences the pupil becomes more and more capable of dealing with situations.

Pupils should share in the development and organization of curriculum material, because this gives them an additional opportunity for growth. Meaningful learning is organization and growth, taking place through the continuous reconstruction of experience. This ideal has not yet been translated into practice. An examination of printed curricula for public elementary schools in cities of 100,000 and over, published between January, 1930, and June, 1935, showed that 60 per cent of them made no evident provision for experiences planned toward the positive upbuilding of the child's personality.¹

¹ Nancy Gertrude Milligan, *A Study of the Relationship between the Philosophy and the Suggested Experiences in Recent Printed Curricula for the Elementary School*. New York: Teachers College, Columbia University, 1937.

The Role of Instruction in Learning — It is not enough simply to encourage children to do their best. Motivation alone does not result in the most effective learning, although differences in the intensity of the need which drives an individual to action probably determines the amount and the speed with which he learns. Neither does mere repetition of the task guarantee learning, although practice is one of its basic conditions and has been relied upon in much of the learning in the past. If answers to certain questions are reiterated with the question, have a pleasant connotation, and are repeated frequently enough in the original process of learning them, many are likely to be recalled after twenty years. Such was the case with the Westminster Shorter Catechism which had been memorized during elementary school years. Twenty years later a number of individuals recalled 50 per cent of the answers perfectly and only 8 per cent required considerable prompting.²

A distinction should be made between practice and instruction.³ Practice involves mere repetition. Instruction refers to guidance in more effective ways of learning. The distinction between practice and instruction may be made clearer by an experiment in learning to throw darts at a target. One group of children were encouraged to do their best, but received no specific suggestions in ways of improving. Neither were they encouraged to analyze each operation. As a result of the practice alone, their skill was no better than that of another group who had had no practice at all. Obviously, they needed knowledge and insight into ways of improving the mechanical aspects of their performance. This insight, as has already been suggested, is obtained from the subject's own analyses of his procedure, and from analyses made by other persons who have observed his efforts. In a group of Swiss children Burks⁴ found

² M. C. Smith, "Delayed Recall of Previously Memorized Material after Twenty Years," *Journal of Genetic Psychology*, XLVII (December, 1935), 477-481.

³ George D. Stoddard and Beth L. Wellman, *Child Psychology*, p. 191. New York: The Macmillan Company, 1934.

⁴ Research in progress.

developmental stages in ability to criticize their own work and that of others which varied from an apparent incapacity or disinclination for autocriticism to a mature capacity to evaluate and assimilate in terms of objective reality. Without such analyses and critical evaluation errors tend to persist and to be perpetuated. There can be practice in error as well as practice in effective methods of work.

Frequently students fall into inefficient ways of learning because they have not had expert guidance in the initial stages of the process. For example, in helping students to acquire more effective reading habits the teacher may encourage them to observe the habits of successful readers, to note the methods by which they get the best results, to gain insight into the reading process, and to analyze the purpose for which they read a given assignment and the best methods of accomplishing that purpose. Somehow the pupil must learn to find the principle, to discover the structure and inner connections of a learning situation. This means, first of all, selecting learning material which contains form and structure and, second, teaching pupils how to discover such inner relationships for themselves. This may be done, as, for example, by teaching them to sense the pattern of a reading passage. Individuals of every age are better able to get the solution of a problem by adopting an organized procedure than by a senseless one. Instead of giving the child the principles underlying the solution of a problem, it is better still to help him to discover for himself its internal structure. Sometimes a question will call the child's attention to the principle. At other times the situation can be changed in such a way as to reveal elements to the child that make the solution evident to him.

Other Important Factors in Learning. — A little learning is a dangerous thing insofar as it may make a child content with what he has accomplished. The child's felt need for a skill is decreased once he has obtained enough proficiency to accomplish his immediate purpose. It is important, therefore, that as soon as the child begins to acquire certain skills

he should set for himself suitable specific standards of accuracy and precision.

That learning must bring satisfaction if progress is to be made, is a fundamental principle supported by both experimentation and home and classroom experience. However, more work needs to be done to ascertain what constitutes satisfaction for a particular child at any given time. The parent's or teacher's approval, especially in the presence of his gang, may give a twelve-year-old the opposite of satisfaction. Some children actually enjoy being scolded because it represents an exciting occasion. A few even get satisfaction from corporal punishment. Unless the experimenter definitely knows that what he labels "blame" or "punishment" really is distasteful to the subject, he cannot generalize as to the effect of praise and blame on learning. Until parents and teachers can enter a child's world and really know what gives him satisfaction and annoyance, they cannot expect to apply the important principle of satisfaction to his education.

When learning satisfies some real need or furthers some cherished purpose, it is inherently satisfying. The right time for acquiring any type of attainment is, as Thorndike has said, the time when one needs it. A definite goal with a knowledge of the results one is achieving evokes more effort than an indefinite goal without knowledge of results. Superficial rewards and punishments cannot compensate for a task that is inherently unsuitable to the child or one that he attacks blindly.

If a child with sufficient ability becomes discouraged because he does not see improvement, the teacher may help him surmount this point by giving him some special instruction and by assuring him that he has not yet reached the limit of his skill. The teacher should encourage him to keep on trying, confident that thereby he will make further progress.

General Considerations in Learning and Teaching.—From the standpoint of guidance the large number of investigations of errors made in various subjects make only

a small contribution. They seldom include suggestions as to "why children encounter these difficulties, as to the precise nature of the difficulties, and as to how these difficulties may be avoided."⁵

There is no one best method of learning. Pupils of varying degrees of general ability have been found to differ in their procedure. For example, written assignments in history, laboratory work in science preceding the recitation period combined with specific formal instruction designed to correct biased views were among the methods that appeared to be of greater value in teaching the less able children than the gifted. Bright children tended to learn best under methods which involved the making of generalizations and the application of principles.⁶

Subjects in elementary school are popular with children for a number of reasons. Many of them provide an opportunity for bodily activity in general, which is an attractive feature. In the fifth and sixth grades success in a subject is a reason for liking it. A year or two later the utility of the subject is a factor contributing to its popularity.⁷

Remedial programs as such have received too much emphasis. There is no justification for calling the modification of behavior instruction in one case, and remedial work in another case. Both are the task of the qualified classroom teacher who has intimate contact with the child, both should, in the beginning, make sure that physical handicaps are removed so far as possible; both should recognize individual differences and adapt instruction to them; both should employ cumulative records of appraisal and instructional procedures used; and, most important of all, both should emphasize self-diagnosis and self-correction.

⁵ G. T. Buswell (chairman), "Psychology of Learning, General Methods of Teaching, and Supervision," *Review of Educational Research*, III (October, 1933), 306.

⁶ *Ibid.*, pp. 287-288.

⁷ J. J. Shakespeare, "An Enquiry into the Relative Popularity of School Subjects in Elementary Schools," *British Journal of Educational Psychology*, VI (June, 1936), 147-164.

Ability Grouping. — Whether children should be divided into sections on the basis of their ability to learn still is a moot question. The major arguments in favor of such grouping are greater efficiency and ease in teaching a relatively homogeneous group. Objections raised to ability grouping are chiefly social and emotional. The give and take among pupils of different levels of ability is said to be more democratic than segregation. Each child, however low his abstract verbal ability, can make some contribution to group enterprises and derive satisfaction therefrom. Moreover, the basis of grouping is almost certain to be recognized by both parents and children and pupils labeled as "bright" or "dumb." Accordingly, an analysis of the social environment of the special class should always be made.

One private elementary school experimented over a period of years with three kinds of grouping. The first plan tried was to put all the brightest children into one of three sections in each grade. This plan resulted in efforts by parents to force their children into the brightest group which was soon recognized as such. As to the children, some of them began to display undue feelings of superiority and to speak disparagingly of the other sections. The second plan was to put those children, who, in some respects, were problems, in a small class under the teacher who previously had had the superior group. But the parents soon became aware of the change that had been made and various ones begged to have their particular child excluded from that group. At present the pupils in each grade are divided into three fairly-equal groups with a flexible administration that makes it easy to shift a pupil from one class to another. No child is held back if he has achieved a year's growth in terms of his own ability. Occasionally, a relatively mature and gifted child is permitted to visit the grade ahead during the spring semester and is then promoted to the next higher grade in the fall. This plan is better than double promotion without any experience in the intermediate grade.

The results of experimental study of so-called homogene-



Underwood & Underwood

CHILDREN IN THE SCARBOROUGH SCHOOL MAKING MAPLE SYRUP

This is an example of an activity in which the children are engaging whole-heartedly and which naturally results in an increase of information in reading, history, and other subjects.

ous grouping are inconclusive. In one large school system ⁸ a comparison of the relative success of pupils in grouped and in ungrouped classes was made, with results favorable to ability grouping. On the other hand, another investigation ⁹ involving more than three thousand pupils in grades four, five, and six indicated that the problem of meeting individual needs of children was only slightly reduced by the sectioning of classes.

Ability grouping at best is limited to several definite types of ability and never eliminates the need for further individualization of instruction. Other recommended methods of providing for individual differences are sectioning according to achievement in various subjects, use of the contract method, and the forming of small, flexible groups based on interests, needs, and abilities within an ordinary heterogeneous class.

LEARNING THROUGH FIELD TRIPS

Field trips teach many things. Usually it is best to have one or two definite purposes in making each trip. The fifth grade of the Lincoln School of Teachers College visited a toy shop and afterward made wooden toys in Industrial Arts class; visited a milk station and made butter and cheese in the cooking laboratory when they returned to school. They took a trip around Manhattan Island, and to the old Van Cortlandt Mansion to study Colonial life and industries. They went to another historic house to obtain background for their weaving and spinning. They went to a bakery and other neighboring stores and to a Food Industrial Exhibition to supplement their practical work in home economics. In order to derive the most benefit from field trips, the class should discuss beforehand what to look for and should summarize their findings after the trip.

⁸ Harriet M. Barthelmess and Philip A. Boyer, "An Evaluation of Ability Grouping," *Journal of Educational Research*, XXVI (December, 1932), 284-294.

⁹ Marvin U. Burr, *A Study of Homogeneous Grouping in Terms of Individual Variations and the Teacher's Problem*. New York: Bureau of Publications, Teachers College, Columbia University, 1930.

LEARNING POETRY

In learning poetry children should first of all gain an appreciation of the poem. Then, unless the poem is a large one, they may learn it most efficiently by reading it in its entirety several times every day until parts of it can be recalled, and giving additional study to the parts which are difficult to remember. They may, however, learn it part by part. The latter method seems to be more suitable for memorizing long poems and it meets the needs of the younger and less intelligent children. In addition to these factors a number of other considerations enter in to make the "whole" method preferable in some cases and the "part" method in other cases.

If the poem is one worth remembering permanently, it should be repeated a number of times after it has apparently been learned. There is "learning" and "overlearning." The things that we do over and over, having once learned them, are the things we always remember. We do not forget the Lord's prayer, how to count to 100, or how to swim because we have overlearned them.

IMPROVING WRITING ABILITY

As children discover more and more uses for handwriting, their willingness to practice the movements which result in standard speed and quality increases. The standard set should be one of combined speed, ease, and quality. In these grades, they need to practice writing legibly as rhythmically and fast as they can, rather than writing beautifully but so slowly that their skill is of little practical value.

Many systems of writing break down when put to the test of rapid legible writing. They require certain equipment and a certain position which is not practical in many study situations. Children find that they cannot write rapidly enough using the method they were taught, so they discard it and write in any way that will enable them to get their homework finished.

Lehman and Pressey¹⁰ found that special drill "aimed at specific illegibilities is more efficacious than general drill in handwriting" The special practice consisted of pointing out to each child the illegibilities which he frequently made, showing him how these illegibilities might cause confusion and how they could be corrected, and requiring him to practice writing words containing the troublesome letters. These investigators found that a few letters, such as *d* written like *cl*, *n* like *u*, *r* like undotted *i*, *h* like *li*, are responsible for most of the illegibility in handwriting

Hildreth¹¹ makes the following suggestions for learning to write in grades four and above:

1. Increase the pupils' opportunities to do meaningful writing assignments.
2. Make sure that the letters are formed correctly and do not force speed at the expense of quality.
3. Study any signs of disability or continuance of immature habits and give differentiated practice as the need is indicated.
4. Help children to set for themselves standards of neatness and legibility and check their written work against these standards. In the grades above the sixth, standard scales for rating quality may be used by the pupils in judging their own handwriting. "By the time the eighth grade is reached, children should be able to write legibly and without tension between seventy-five to one hundred words a minute"¹²
5. Children and teachers should keep samples of writing to compare with later results.

IMPROVING DRAWING ABILITIES

Children's art work may be improved, in the first place, by acquainting them concretely with ideals of art—organization, sincerity, attention to significant form, avoidance

¹⁰ Hilda Lehman and Luella C. Pressey, "The Effectiveness of Drill in Handwriting to Remove Specific Illegibilities," *School and Society*, XXVII (May 5, 1928), 546-548.

¹¹ Gertrude Hildreth, *Learning the Three R's*, pp. 253-258.

¹² *Ibid.*, p. 253.

of unimportant details, and originality. These ideals may grow out of a discussion of the factors that make a picture artistic, and may be acquired from observation of good color combinations and significant form in works of art in museums, books, or classrooms.

In the second place, the teacher can refer to the good points in the drawings of each member of the class. The best work of other children frequently stimulates rather than discourages creative imagination.

In the third place, the teacher may assist the child and rely upon the class to stimulate the need for learning art principles and technics by pointing out certain technics and helping him to discover certain principles that make it possible for him to show others the idea he has in mind. For example, one class began of their own accord to draw birds. The drawings bore little resemblance to the genus bird. One looked like a hybrid horse and ostrich. The teacher then called attention to a recent exhibit of birds which the children had seen, asked them how the bird's head compared in size with the rest of the body, and by means of several ovals and a few simple straight lines showed them how the essential form of birds might be used in the creation of a work of art.

In the fourth place, adverse criticism should generally be avoided. The child himself soon begins to be discouraged concerning his ability to translate his ideas into art forms, and criticism at this point is apt to end his artistic efforts. Children should derive a positive satisfaction from their efforts at expression in art media.

In the fifth place, freedom and originality on the part of each pupil should be encouraged by providing a variety of art media with which he may work and allowing instruction to grow out of his free expression in drawing, construction, design, and color.

Many adults frankly say "I simply can't draw," and deny the possibility of improving artistic aptitude by training. In all probability they are mistaken. When artistically inferior children have followed a "special program of instruc-

tron including free expression and motivation"¹³ their level of art ability was definitely raised. Unfavorable home conditions, lack of proper art materials, lack of incentive to draw well, and lack of sensitivity to elements of artistic quality are important causes of retardation in artistic achievement.

IMPROVING LANGUAGE ABILITIES

Dramatization gives training in speech and is still enjoyed in this period. Plays written by the children themselves are especially valuable in promoting vivid and forceful speech. One finished dramatic production probably has less educational value than five or ten less elaborate productions.

But the main means of improving children's speech, as has already been stated, is through the everyday conversation which social life demands and which is a natural part of all interesting and valuable activities in which children engage.

Learning to Read More Efficiently. — Suggestions for instruction in reading have already been given in the previous chapter. Without doubt this age period is a crucial time in perfecting the skills already acquired and for developing higher levels of reading ability. Certain fundamental skills of accurate visual perception of the printed symbols as thought units, the habits of moving the eyes rhythmically and speedily from left to right across the line, and of making an accurate return sweep back to the next line, should be well established by the fourth grade. Instruction in reading, however, must be continued, so that improvement in the mechanics of reading may develop with need for understanding and continued growth in power of comprehension.

The following suggestions are, perhaps, the most important points for teachers to keep in mind in helping pupils above the primary grades to make progress in reading:

1. Begin instruction at the child's present level of proficiency. Do not force him into too difficult material beyond his thinking level and his reading skill. The coefficients of

¹³ A. W. Saunders, "The Stability of Artistic Aptitude at the Childhood Level," *Psychological Monograph*, XLVIII, No. 1 (1936), 126-153.

correlation between scores on verbal tests of intelligence and reading ability hover around 0.60. As might be expected, correlations with group tests usually are higher and correlations with non-verbal tests much lower than those with Binet scores. Although even the feeble-minded may acquire a certain degree of mechanical reading ability, a minimum intelligence level is necessary in order to comprehend what is read. Some degree of reading retardation is to be expected of any child whose ability, represented by a Binet intelligence quotient, is below 80.

2. Provide for and encourage voluntary reading related to pupils' individual interests and to the classroom activities.
3. Help pupils to develop certain new reading skills appropriate to their present interests and needs. This can best be done concretely in connection with the daily reading and study activities. The kind of assignments given, the kind of examination, and the nature of the class discussions all have an important part in determining the way children in these grades read. If they are expected to know isolated details, they will read to get details. If they are expected to discover the author's pattern of thought and relate it to their previous experiences and to their present problems, they will read with this purpose in mind. This natural kind of practice is safe and sure, whereas training in the mechanics of eye movements and speech enunciation may decrease the number of fixations per line and eliminate errors in word pronunciation without effecting any fundamental improvement in getting thought from the printed page. The teacher must provide for progression in reading abilities.
4. Help children to acquire a larger and more precise vocabulary in the fields in which they are studying. Such a vocabulary will be acquired incidentally, to a large extent, in connection with their reading and speech. In addition special attention may be given to unfamiliar words in their context. These words may be checked as the child reads and later looked up in the dictionary, studied, and used.
5. Diagnose the special reading difficulties of individuals and apply appropriate treatment to the specific problems. Causes of reading deficiency may be physical and constitutional, psychological, and environmental. They include

visual and auditory defects; mental maturity below that needed for the reasoning processes involved in reading and for the rapidity of an average program of instruction; a poor start in the primary grades due to absence, change of schools, poor teaching, or other factors; an inadequate background of experience with things and with words and special oral language handicaps; personality and emotional factors, which include a distaste for reading, and a pupil's idea of himself as incapable of ever learning to read. Eye movements are symptoms, not causes, of immature reading.

Obviously, there is no one best method for remedying reading deficiencies that arise from such diverse causes. As Gates has emphasized repeatedly, a combination of methods appropriate to the individual child must be used. The good reader has a versatility of attack on unfamiliar words. He uses phonetic analysis when useful to him, divides and combines syllables, or recognizes small words within larger ones.

LEARNING TO SPELL

The more important recommendations concerning learning to spell are the following:

1. Select words which the children need at present or will need to know how to spell.¹⁴ Spelling demons—i.e., words which have nothing to recommend them but their difficulty—are no longer taught. One spelling list is not adhered to for all pupils, and the number of total words to be learned has been scientifically reduced.
2. Teach the words which the children do not know how to spell. These words can be determined by a pre-test, following which each child can keep his own record of the words he has spelled incorrectly, or by noting from day to day the words a child needs to learn. Avoid practice in error.

¹⁴ Frederick S. Breed discusses the question of choice of spelling words in a series of articles on "How to Teach Spelling" in *Normal Instructor and Primary Plans*, XXXVII (October, November, and December, 1927).

See also Gertrude Hildreth, *Learning the Three R's*, pp. 206-209, and Arthur I. Gates and David H. Russell, *Diagnostic and Remedial Spelling Manual: A Handbook for Teachers*. New York: Teachers College, Columbia University, 1937.

3. Be sure that the children comprehend the meanings of the words. Using the word in sentences and in conversation makes the meaning clear. The daily activities of the school can be planned to provide many opportunities for pupils to see, hear, pronounce, and write the commonly used words which they should learn to spell. Spelling achievements in the upper grades are largely by-products of reading and writing, but habits of clearly perceiving words are necessary if the child is to profit from these other activities. Thus several approaches to the study of words — visual, auditory, and kinesthetic — will be used.
4. Place more responsibility on the child to plan his own spelling lessons, set his own goals, and make progress toward them.
5. Give children opportunity to practice writing the word in connection with many school activities and projects in which reading, writing, composition, and language are involved.
6. Provide special drill on difficult words and difficult parts of words as the need is indicated. In many cases in which a certain part of the word offers special difficulty, attracting the child's attention to the difficult part seems to be helpful. It has been found that *ie* and *ei*, *al* and *le*, *ence* and *ance*, *ent* and *ant*, *able* and *ible* are frequently confused, and that letters in the middle of the word are more often spelled incorrectly than the first and last letters. Book and Harter¹⁵ found that errors in spelling were almost equally distributed between two classes: (a) errors due to lack of thought in writing, i.e., the pupils knew how to spell the words but wrote them incorrectly; (b) errors due to inadequate observation. In this case the pupils did not know how to spell the words. Hildreth¹⁶ suggested the following causes of spelling errors: mispronunciation, English spelling irregularities, writing errors and spelling lapses, and spelling failure due to faulty instruction. In the seventh grade a list of stimulus words to which the pupil was to respond by writing all the words

¹⁵ William F. Book and Richard S. Harter, "Mistakes Which Pupils Make in Spelling," *Journal of Educational Research*, XIX (February, 1929), 106-118.

¹⁶ Gertrude Hildreth, *Learning the Three R's*, pp. 491-507.

suggested to him by the stimulus words, and an analysis of written themes were used to diagnose and test each pupil's readiness, richness, and mastery of words in his own active vocabulary¹⁷

7. Encourage the habit of using the dictionary in case of doubt.
8. Emphasize an attitude of desiring to spell accurately and to practice correctly.

LEARNING ARITHMETIC

The general principles proposed for learning arithmetic in the primary grades apply to this period also. Readers who are especially interested in the psychology and methods of teaching arithmetic will be benefited by a careful study of books dealing specifically with this subject¹⁸

A few additional points, however, may profitably be emphasized.

1. Obviously, there should be a gradation from easy to difficult combinations, processes, and problems, and an introduction of practical problems before the more abstract consideration of the process. For example, the idea and uses of percentage should be familiar to the pupils before it is introduced as an arithmetical process. Clapp¹⁹ found the most difficult combinations to be $8 + 5$, $7 + 9$, $5 + 8$, $9 + 7$, $6 + 8$, $6 + 9$, $5 + 7$, $7 + 8$, $8 + 7$, $9 + 6$, $5 + 9$, and $8 + 9$. Marjory Fleming wrote in her diary in the

¹⁷ J. C. Almack and C. H. Staffelback, "An Experimental Study of Individual Improvement in Spelling," *Journal of Educational Research*, XXIX (September, 1935), 6-11.

¹⁸ G. T. Buswell and Charles H. Judd, *Summary of Educational Investigations Relating to Arithmetic*. Supplementary Educational Monographs Number 27. Chicago: University of Chicago, 1925.

Luella Cole, *Psychology of the Elementary School Subjects*. New York: Farrar and Rinehart, Inc., 1934.

Gertrude Hildrieth, *Learning the Three R's*, Chapters VI, XIV, XIX, XX, XXIII.

Edward Lee Thorndike, *The New Methods in Arithmetic*. Chicago: Rand-McNally and Company, 1921.

¹⁹ Frank L. Clapp, *The Number Combinations; Their Relative Difficulty and the Frequency of Their Appearance in Text-Books*. Bureau of Educational Research, Bulletins Numbers 1 and 2. Madison, Wisconsin: University of Wisconsin, 1924.

summer of 1810, "the most Devilish thing is 8 times 8 and 7 times 7 it is what nature itselfe can't endure."²⁰ Time should not be wasted teaching arithmetic facts that the children already have learned either in school or in their outside work and play activities. Thorndike²¹ has shown that textbooks provide excessive practice in certain combinations which children have greatly overlearned and give scanty practice in combinations that present real difficulty. There doubtless comes a time in the arithmetical affairs of children when they recognize the need for drill on combinations which they wish to use in their activities and with which they are still having difficulty.

2. At any given time instruction should begin at the pupil's level of accomplishment, reviewing content previously taught and giving special instruction as necessary in order to supply deficiencies. When the teacher meets a group of pupils for the first time, he may ascertain their arithmetical knowledge by giving a standardized arithmetic test²² or an informal comprehensive test which he has prepared.
3. Standards of achievement should be individual. Time should not be wasted and failure invited by trying to bring all children of a grade up to a common level of accomplishment. There are some pupils who cannot grasp the abstract aspects of arithmetic and it is no kindness to them to

²⁰ *The Complete Marjory Fleming*, transcribed and edited by Frank Sedgwick. New York: Oxford University Press, 1935

²¹ Edward L. Thorndike, "The Psychology of Drill in Arithmetic: The Amount of Practice," *Journal of Educational Psychology*, XII (April, 1921), 183-194

²² L. J. Brueckner, M. Kellogg, and M. J. Van Wagenen, *Analytical Scales of Attainment in Arithmetic*, Grades III-IV, V-VI, VII-VIII, Educational Test Bureau, Minneapolis, Minnesota; *Brueckner Curriculum Tests in Arithmetic Processes*, Grades III-VIII, J. C. Winston Company; *Buckingham's Scale for Problems in Arithmetic*, Grades III and IV, V and VI, Public School Publishing Company; *Buswell-John Diagnostic Tests for the Four Fundamental Processes in Arithmetic*, Public School Publishing Company; *Compass Survey and Diagnostic Tests in Arithmetic*, Grades II-VIII, Scott, Foresman and Company; *Hildreth Arithmetic Analysis Tests*, Grades II-VI, Bureau of Publications, Teachers College, Columbia University; *Monroe Diagnostic Tests in Arithmetic*, Grades IV to VIII, Public School Publishing Company; *Reavis-Breslich Diagnostic Tests*, University of Chicago Press; *Stevenson's Arithmetic Problem Analysis Test*, Grades IV-VI, Public School Publishing Company; *Woody-McCall Mixed Fundamentals*, Grades III-VIII, Bureau of Publications, Teachers College, Columbia University.

force them to attempt the impossible. The modern trend is toward a lightened load in arithmetic practice in all grades.

4. Real problems should be utilized. Problems that confront the children in their home or school activities, or imagined problems such as they might meet in life, are more interesting to them than purely hypothetical problems. Moreover, these real problems are not difficult to find in a school where children *live*. Interest, in turn, results from mastery — from the successful solution of problems.

"I have twenty-five cents to spend for lunch. Which are the best foods on the lunchroom menu today to buy with this amount of money?" is a real problem. "If I have \$275.60 in the bank and draw out \$25.00, how much have I left?" is a problem which a boy or girl might meet in his contacts with banks now or later in life. Real arithmetic problems, as has already been suggested, may be found in connection with the children's work in making articles of wood, aprons, and dresses, in dividing a large recipe to make a smaller amount or multiplying it for large quantity cookery, in managing and patronizing the school bank and the school cafeteria, and in other school situations. Plenty of problems similar to those children may meet can be found, so that the teacher need never resort to such absurd situations as dividing an apple into thirteen parts, or finding the number of square inches in a circular baseball field.

5. Attention should be given to an analysis of basic factors in problem solving. There are a number of factors in solving problems besides knowing the number of combinations. One of these is ability to read and understand the terms used, the facts given, and the solution required. Another is the ability to decide when to use addition, subtraction, multiplication, or division. Another is to judge whether the answer obtained is a reasonable one. *Stevenson's Problem Analysis Arithmetic Reading Test* is helpful in finding out which factors are causing trouble for a given child.

The use of graphs is one means of concretely developing vocabulary and concepts as a basis for later work with

fundamental processes and abstract numbers. Strickland²³ found that six types of graph, namely, the developmental picture chart, unit pictograph, bar graph with figures given, bar on grid, line graph, and circle graph, representing subject matter which was in line with their current classroom interests were readily read by children in the second, third, and fourth grades. The content of the social studies offers many possibilities for the use of graphs which add concreteness to the social studies program as well as contribute to growth of facility in quantitative thinking.

LEARNING TO GET ALONG WITH OTHER PEOPLE

This is a very important type of learning throughout elementary and high school. Through associating with others, the child's attitude toward them is changed. Always wanting to have his own way results in dissatisfaction in the end because it ostracizes him from the group. A generous act wins social approval. The boy or girl learns through experience which responses on his part are pleasing and which are displeasing to others. From observing persons who are successful in social situations an intelligent child can learn to recognize the kind of behavior that is socially desirable. A less socially sensitive child needs more specific instructions as to the type of behavior that is desirable in concrete situations.

ACQUIRING HABITS OF STUDIOUSNESS

Attitudes and habits of work are more important than the knowledge acquired. The two, however, develop together.

Although one cannot judge studiousness entirely by outward appearances, the following behavior which has been observed by Symonds²⁴ and others to be characteristic of studious pupils has significance:

²³ Ruth G. Strickland, *A Study of the Possibilities of Graphs as Means of Instruction in the First Four Grades of the Elementary School* New York: Teachers College, Columbia University, 1937.

²⁴ Percival M. Symonds, "Study Habits of High School Pupils," *Teachers College Record*, XXVII (April, 1926), 713-724.

HABITS OF STUDIOUS PUPIL	HABITS OF NON-STUDIOUS PUPIL
When the period ends he finishes the page, problem, or paragraph on which he is working	When the period ends he stops in the middle of what he is doing
Reads each page at an efficient rate for the type of material	Pauses on one page an unusually long time. This suggests that although his eyes are on the page his thoughts are elsewhere
Attacks his problem eagerly	Attacks his problem listlessly
Is generally industrious during study periods	Is not usually industrious in study periods. Obviously spends much time in daydreaming and dawdling
Enjoys doing new things	Shrinks from new material
Hands work in on time	Is frequently slow in handing in his work
Is critical of what he reads	Accepts without criticism whatever he reads
Discusses points of interest in lessons with fellow students.	Does not talk about lessons outside of class
Voluntarily corrects mistakes on his paper or in the recitation of others	Usually lets mistakes go uncorrected
Checks his work when checking is possible	Does not bother to check his work
Does special computations, looks up words, etc., needed in the class discussion	Usually lets "the other fellow" do the extra work
Listens to all the questions and finds an answer for them	Sits apathetically until called to life by being asked a question. Then tries to find an answer.
After reciting, lets his attention turn to something else.	After reciting holds his attention to the lesson for some time
Cares a great deal for success in school.	Does not seem to care for marked success in school
Is not willing to have questions pass by unanswered, or problems unsolved.	Does not "suffer from unanswered questions"

If the teacher or parent observes that a child shows a preponderance of non-studious habits, and if this pupil's work is below the achievement which may reasonably be expected of him in view of his intelligence, the teacher should first try to discover the causes of his lack of success.

SOME IMPORTANT FACTORS INFLUENCING
LEARNING ILLUSTRATED BY
HISTORY LESSONS

Selections from some of the stenographic reports of lessons in United States History taught in Helseth's²⁵ experiment may be used to illustrate some important factors influencing learning. Each new unit of work grew out of previous discussions.

T What was the question, —, that you took down for us while we were studying the World War?

C. I wrote it

1. Shall the United States join the League of Nations, and subheads

(a) Why don't we join?

(b) Is the feeling of co-operation and unselfishness aroused by the war still going on?

Further specific questions relating to the main problem were added in class discussion. From this part of the lesson it is evident, in the first place, that the material had meaning for the pupils. The new facts to be acquired were related to a familiar body of knowledge, important points had been selected by the pupils and combined into larger and more distinct thought patterns. This is advantageous from the standpoint of learning because meaningful material is easier to learn than material that is not understood. Any subject that is "Greek" to the child is hard to learn. In the second place, the pupils *wanted* to learn the material. The teacher, by helping the children to discover worthwhile problems, aroused interest in the subject. They were ready to begin work with an attitude of interest and attention. Attitude or "mind-set" not only influences the selection of facts learned but also increases the ease of learning by determining in part whether a person will be satisfied or annoyed by the outcome. In the third place, the pupils had definite

²⁵ Inga Olla Helseth, *Children's Thinking*. A study of the thinking done by a group of grade children when encouraged to ask questions about United States history, pp. 131-150. New York City. Teachers College, Columbia University, 1926

goals to reach. These goals were not so high that they could never be attained nor so low that they could be reached without effort. Woodworth²⁶ writes "You cannot do so well when you simply 'do your best' as when you set out to reach a certain level high enough to tax your powers without being quite out of reach. You cannot jump so high in the empty air as you can to clear a bar" Moreover, the goal was "heartily adopted as their goal" To have a definite question in mind results in economy of learning because whatever is useful in answering the question is selected, and whatever is not useful is neglected. Time is not spent on irrelevant material.

After a short discussion concerning the method of studying the problem, the teacher said: "Have you looked at your available materials? That is wise before deciding how to handle a problem. I have looked at them. I am afraid you will not find enough classified facts, so that you can investigate each question separately this time. Suppose we use a combination of your suggestions this time. Like this — Study all the questions, put what you get out of your study into sentence outline form. Add, of course, any questions you like. Then in class we will take one question at a time, and make a class outline from all of yours. Would that be satisfactory? I should suggest that it would help you in your work if you put each big question you work on, on a separate sheet of paper. I should add a sheet for references also."

The teacher here made another suggestion important in learning, namely, to study the material in the form in which it is to be used. Using geography and history to solve some present social or political problem is more economical from the standpoint of acquiring the responses which life demands, than learning isolated historical and geographical facts. This important guiding principle in efficient learning

²⁶ Robert S. Woodworth, *Psychology, a Study of Mental Life*, pp. 542-543 New York: Henry Holt and Company, 1921. Quoted by permission of the publisher

has been stated clearly by Thorndike: ²⁷ "Favor, therefore, the situations which life itself will offer, and the responses which life itself will demand."

In another period the pupils co-operated in making an outline which answered the questions raised. They referred to notes and books, and gave from memory other relevant information which they had previously acquired. When they had finished the teacher said, "That was a good summary, class." The teacher here used an effective incentive to learning—praise. Experimental work has shown that praise aids improvement. In one experiment ²⁸ forty-eight boys and sixty girls in grades four and six were divided into four groups on the basis of initial ability and age. They took the Courtis Research Tests in Arithmetic during fifteen-minute periods for five days. One group was praised; one, reproved; one, ignored; and one treated in the teacher's usual way. The praised group showed an average increase of eight points in their scores; the reproved group two points, the ignored group one-half a point, and the control group a loss of about one-half a point. The praised group was the only one which showed an increase in proficiency from the beginning to the end of the series. The girls when praised showed a greater improvement than the boys, and the boys when reproved improved more than the girls. This experiment shows the general value of praise as an incentive under these conditions. Its value to individual children could be ascertained only by a study of each boy and girl.

Helseth's plan of teaching also gives pupils a knowledge of results they are achieving in terms of their own goals and purposes. The class discussion which was crystallized in an outline of the best answers to each question served as a check on the pupils' thinking and preparation. It helped the children to see whether they were thinking clearly or carelessly and whether they had made a relevant or irrelevant

²⁷ Edward L. Thorndike, *The Psychology of Arithmetic*, p. 101. New York: The Macmillan Company, 1922.

²⁸ Elizabeth B. Hurlock, "An Evaluation of Certain Incentives Used in School Work," *The Journal of Educational Psychology*, XVI (March, 1925), 145-159.

choice of facts from their reading. Many experiments have shown that individuals do better work when they "have a clear and visible measure of success" Kirby's experiment²⁹ with 1350 children in the third and fourth grades gives some further indication of the effect of knowledge of results on achievement. Each child received the record of his previous performance and was encouraged to surpass it. These children made an average gain of 48 per cent in addition during sixty minutes of practice and 75 per cent in division after fifty minutes of practice. Discussion in which the children are held to reasonable standards of logical thinking is also a measure of success which children can recognize.

In these lessons ideas were frequently repeated in new relationships. Experiments have not shown the best distribution of practice for learning of this kind, but, in general, practice appears to be most effective when it is frequent at first and gradually becomes less frequent. This type of distribution of practice results in more efficient learning than equal distribution throughout the period. Few textbooks and teachers give sufficient attention to this factor in learning.

Perhaps most important of all were the attitudes which were being built in these lessons. Kilpatrick³⁰ has emphasized the multiple learnings that are going on at a given time. In a history lesson, attitudes toward the school, the teacher, and the subject, habits of active attention or divided attention, habits of accepting everything without criticism, habits of demanding proof of statements, and many other habits and attitudes are being formed. These are likely to be more permanent and more potent in influencing the child's future behavior than the content of the lesson itself. Similarly, many habits and attitudes which the child learns outside of school without realizing that he is learning them, last long after the facts of geography and history learned in

²⁹ Thomas S Kirby, *Practice in the Case of School Children*. Columbia University Contributions to Education, Teachers College Series No 58. New York. Teachers College, Columbia University, 1913

³⁰ W H Kilpatrick, *Foundations of Method*, Chaps VIII, IX. New York. The Macmillan Company, 1925

school are forgotten. The parent and teacher, therefore, should be alert to observe these attendant learnings and see that the environment is such as to encourage desirable "concomitants."

The teacher's part in the learning process is to stimulate thinking by providing suitable books, pictures, and social situations and to be a contributing member of the group with wide experience and knowledge. He can supplement the children's experiences and help them to analyze and find solutions for the difficulties or hindrances which they encounter in attaining the standards of achievement they have set for themselves. The teacher should recognize children as individuals who should be encouraged to progress in wisdom and knowledge, appreciations, and skills, at their own rates and according to their special needs and capacities.

The assignment has already been mentioned as an especially important factor in learning. A good assignment (1) arouses interest and stimulates each pupil in the class; (2) requires and gives practice in the more effective kinds of reading and study habits, and (3) is formulated co-operatively by pupils and teacher. Pupils tend to study in the way indicated by the assignment. If the assignment calls for thoughtful reading and organization of knowledge around important problems, the pupil will study in that way. Through daily assignments, developed in large measure by the pupils themselves, effective methods of reading and studying may be concretely demonstrated. Unless good study habits are specifically developed, pupils often merely memorize enough facts to meet the school's requirements because memorizing is the path of least resistance.

THE FLEXIBLE NATURE OF HABITS

In case this attempt to define habits in definite terms has given the impression that habits are fixed and inflexible, a word should be added about the nature of habit. Habits as Dewey describes them, are ways of using the environment. In a rapidly changing world, flexible habits that may be modified as circumstances demand are necessary. For exam-

ple, a child should acquire the habit of brushing his teeth, but at the same time he should acquire the habit of looking for the discovery of new facts concerning the care of the teeth so that he will be able to change his old method for a better one. Parents and teachers are not infallible. Habits acquired in childhood should not necessarily last forever. Along with the habit should be established an attitude of looking at the habit critically with a view to improving it.

A habit cannot be changed simply by telling a child "not to do it." The way people respond to his acts, the satisfactions that result from them, and other conditions in his environment must be changed in order to produce a changed response.

Habits have a place among the major aims of education. They should be developed in effective relation to skills, knowledge, interests, attitudes, and standards.

QUESTIONS AND PROBLEMS

1. How can a teacher help a boy to play baseball more skillfully? To write? To draw? To establish friendly contacts? To meet difficulties calmly? In each case describe the conditions under which the results are attained.
2. How can a child be encouraged to read more books and magazines?
3. How can conversation be raised above the "moron level"?
4. What interest factors are inherent in writing compositions?
5. How can a teacher in school combat the bad influence of poor grammar used at home?
6. Outline a procedure for teaching spelling to children who have special spelling difficulties.
7. Give an illustration of each of the important factors influencing learning. Show how a number of these factors may be utilized in teaching a particular lesson.
8. Observe the study habits of a small number of students who are doing exceptionally good work. Watch them at work, analyze with them their written and oral work. Obtain diary records of their twenty-four-hour activities, and discuss their study habits with them. Study in the same way a number of students doing the poorest academic work. Compare the results for the two groups.

CHAPTER XX
SPECIAL PROBLEMS OF THE
POSTPRIMARY-PREADOLESCENT
PERIOD

It should be reiterated in this chapter that behavior problems are a kind of development. They represent the child's way out of a difficult situation. They are ways of response he has learned. To parents and teachers, however, they represent very real "behavior problems."

PROBLEMS RECOGNIZED BY TEACHERS
AND PARENTS

Teachers and parents still persistently rate aggressive behavior, inattention, carelessness, and disorder in the classroom as more serious and prevalent than recessive, withdrawing behavior. Talking out of turn, quarrelsomeness, and lack of interest in school work attract more attention on the part of teachers than do bashfulness, daydreaming and oversensitiveness.

Clinical workers, on the other hand, regard shyness, withdrawing behavior, and fear as more significant in child development than the behavior problems which teachers generally stress. However, those teachers who have had work in mental hygiene tend to agree with clinical workers in their evaluation of children's behavior.

Adults usually show sympathy and understanding for the kicking, squirming, and restlessness that accompany the physiological needs of hunger in the infant. It is unfortunate that, in general, they do not show the same insight into the psychological needs that underly the restlessness of school children, the "apparently aimless use of energy in lying, stealing, cheating, bullying, boasting, showing off, and other unacceptable attempts to relieve psychological ten-

sions"¹ These are all manifestations of maladjustment, sometimes due to emotional instability, sometimes due to physical discomfort, or to failure to fit into the social life of the school and neighborhood, or to keep pace with the academic work.

Frequently the problems of children in the fourth grade may be traced back to the first year of school. At that time difficulties of adjustment may have become acute, especially in a school where unduly long periods of concentration and sitting still are demanded, and especially in the case of children who have previously been overdependent on adults, shy, and sensitive.

There is some evidence that under ordinary school conditions, "behavior problems" reach a peak at about thirteen or fourteen years for boys and at fifteen or sixteen years in the case of girls. More problems are reported for boys than girls, in the ratio of about ten to six. Listed in the order of frequency of mention, the kinds of behavior frequently reported are the following:

- Aggressive and antagonistic behavior
- Disobedience and disrespect
- Difficulties in school work, daydreaming
- Failure to co-operate
- Truancy, lying, and stealing
- Nervousness and hurt feelings.

FACTORS IN ADJUSTMENT

Health. — Health is an important factor in determining children's behavior, although it may not affect their intelligence test scores or their school work. Some children who are considered lazy are really in poor health. Others who are considered dull may have defects of hearing or vision. Still others may be made irritable by bodily pain. If indigestion, earache, toothache, or other pain is long continued, it may lead to temper, unreasonable attacks on other chil-

¹ Harold H. Anderson, "The Dynamic Nature of Personality," *Personality Adjustment of the Elementary-School Child*, p. 244. Fifteenth Yearbook, The National Elementary Principal, Vol. 15, No. 6, July, 1936.

dren, and querulousness. Inharmonious or immature growth may result in nervous strain, restlessness, and in awkwardness which in turn may create social problems for the child.

Certain extreme deviations from normal growth may cause difficulty in a child's adjustment. The fat boy or the fat girl, if sensitive to teasing, may develop an antisocial attitude or assume a clowning role that wins the laughter of the class. The seriously undernourished child may lack energy to cope with his school tasks and with the even more fatiguing problems of getting along with other persons and maintaining satisfying social contacts. This is a still more difficult task for the neurasthenic, the child suffering from tired nerves.²

Unsatisfactory Scholastic Performance. — The majority of cases referred for psychiatric consultation fall in the groups of morons, borderline deficiency, dull, average, and slightly superior intelligence. The causative factor is not the intelligence level *per se* but rather the relationship between the individual's intellectual endowment — what he is actually capable of achieving — and what the school and the home expects him to understand and accomplish and the prestige he expects to maintain with his classmates.

The emphasis that has been placed upon acquiring skill in the tool subjects finds justification in the behavior concomitants resulting from lack of these skills. It is not the teacher's attention to helping the child to acquire skill but his attitude toward the unsuccessful pupil that is subject to criticism. A pupil's failure should arouse the teacher's curiosity, not his disapproval. The "problem pupil" should be viewed as an opportunity for guidance, not as a nuisance or a necessary evil.

In one school system it was found that changes in grade placement helped thirty-two out of one hundred problem cases. Other school conditions that may precipitate socially unacceptable behavior are pernicious speed drills, faulty

² Annie Dolman Inskip, *Child Adjustment in Relation to Growth and Development*, p. 98. New York: D Appleton Company, 1930.

methods of teaching reading and other basic subjects, and neglect of the superior child. Frequent changes of schools are disturbing. Children who must often move about from place to place, because of the nature of their father's occupation, seem to have a proportionate amount of difficulty in adjusting to school. It is hard for a child to break into a new school situation.

Home adjustments as well as school adjustments frequently need to be made. In one study of parental overattention to the child's work at school, it was found that 70-80 per cent of the children who were babied or pushed had poor work habits which were growing worse. Sometimes this overattention took the form of calling for the child at school long after the age when children are able to take care of themselves. At other times it took the form of constantly checking up on the child's work, conferring with the teacher, commissioning brother or sister to bring home reports of the child, and insisting that he spend every spare minute in what they consider profitable work.

Difficulty in Getting Along with Other Persons.—The home conditions mentioned as possible causes of unsatisfactory scholastic performance may also result in poor social adjustment. The child who is the center of attention at home discovers with a shock that the school world does not similarly revolve about him. Unless he can develop habits of getting along with other children, he may find himself isolated on the island of his own egocentricity. Lack of skill in the games other children are playing and difficulty in oral expression are very important deterrents to good social adjustment. Animositities against individual teachers occasionally distort a child's entire school life.

The child's emotional life and habits which in the past have found expression in certain ways condition his present school adjustment. His aversions, predilections, and drives find an outlet in the school situation.

These problems of social adjustment should be viewed by the teacher as opportunities—as a challenge to his skill as a teacher. In more or less subtle ways children may be

guided in modifying their behavior. For example, if a child is allowed to express a talent or to make a unique and valuable contribution to the group or if he has an opportunity to win prestige, he frequently will experience a general change of attitude. Singing or other musical activities sometimes help a child to develop co-operation, as co-operation is essential in such group activities.

Success in Dealing with Difficulties of Adjustment. — Success may be expected to a greater extent in dealing with certain problems of adjustment than with others. From a follow-up study of 200 children referred to the California Bureau of Juvenile Research,³ it was concluded that children with the following traits are most likely to profit by clinic guidance: chronological age below fifteen years, normal or superior intelligence, school placement below the seventh grade, and school placement on a par with mental age. These results emphasize the importance of early discovery and treatment of behavior disorders.

DISCIPLINE

Son: Did you beat me when I was a child?

Father: Yes, for your own good.

Son: Then why shouldn't I beat you, if beating does a person good? Besides a father deserves to be beaten much more than a child does. He has less excuse for doing wrong.

Discipline, in the sense of meting out punishment for a given crime, is a term that mental hygienists have practically dropped out of their vocabulary, but it still occupies a prominent place in the minds of many parents and teachers. When parents and teachers clearly see child behavior as growth, the traditional concept of discipline will drop out of their thinking likewise.

Punishment. — Punishment as it was conceived a generation ago has no place in modern child development and guidance. In the first place it was used primarily to secure

³ M. Davidson, "The Relationship of Adjustment Status of Child Guidance Clinic Cases to Age, Mental Capacity, and School Placement," *Journal of Juvenile Research*, XIX (July, 1935), 160-170.

obedience to authority. The objective of developing in the child responsibility for his behavior had not emerged in its present form. Today the child is disciplined through his own efforts to reach certain goals which he himself has determined. External compulsion can produce only conformity; it cannot develop self-direction and self-control.

In the second place the older kind of discipline was backward-looking, not forward-looking. It was concerned with expiation for a past offense rather than with character development. It relieved the feelings of the offended person; whatever benefits it may have effected accrued to the comfort or convenience of adults rather than to the personality of the child.

In the third place the "good old-fashioned kind of punishment" was directed toward symptoms rather than toward underlying sources of the difficulty. One would hardly whip a child for feeling inferior even though this sense of inferiority manifested itself in disturbing behavior, nor would one detain a child after school whose restlessness was due to nerve fatigue. In practically every instance the occasion for punishment disappears when the cause of the difficulty is discovered.

This criticism of the discipline of the past does not, however, imply that there is no place for deprivation, for hardship, even for physical pain in the more modern conception of child development and guidance. Along with freedom of choice, children must accept the natural consequences of their choices. The three boys who selected a vacant lot in which to play ball, recognized the justice of having to pay for the large pane of glass which they broke. They earned the money or took from their tin banks the amount needed to repair the damage. Similarly, pain is the natural consequence of certain acts and should be endured with fortitude. This is quite different from the application of force by someone by virtue of his superior power. The older the child grows, the more he resents corporal punishment. About 80 per cent of a large group of children "threw all responsibility on the one who punished them."

Verbal Methods. — Preadolescent children may profit by occasionally having put vividly before them the consequences of certain courses of action and the effect of their behavior on other persons. Although the personal influence of the teacher alone is usually not so potent in this stage of development as the sentiment of the group, nevertheless it can play a vital role if adroitly applied. The teacher who has entered into his pupils' world is able to show a child more clearly than he would see alone how his action affects the group and how he may establish a more friendly relationship. Children of this age are interested in making their own rules of conduct and will be more likely to obey them than the best code imposed from above.

The effect of scolding and nagging is simply to annoy children of this age. They acquire great facility in ignoring it. One twelve-year-old invariably answered an absent-minded "yes" to his mother's incessant admonitions, without the slightest intention of acting upon her suggestions. "Please don't begin to preach," one twelve-year-old girl begged. She showed the antagonism to adult authority and the aversion to nagging which is characteristic of this period. Threats seldom are worth the breath it takes to give them. Children rarely consider them of much importance.

The disapproval of a person whom the child does not respect likewise is ineffectual. It follows from the discussion of the nature of discipline that the person best fitted to deal with behavior problems is the one who knows the children best and has their respect and affection.

Such a person will use "the highest level of appeal that will work." He may appeal to authority, or to control by the group, and, if possible, to the child's own self-control. Between the extremes of consideration for others and fear of pain are many incentives to action: personal advantage, approval of others, satisfaction in successful activity, increased skill, being of service to the group, and developing the kind of self one wants to be.

DEALING WITH DISOBEDIENCE

Disobedience, like *discipline*, drops out of the educator's vocabulary when he has acquired the mental hygiene and the guidance point of view. What is commonly called disobedience then becomes either the reaction of the child to an unjustifiable attempt at domination by one in authority or a failure on the part of the child to yield to environmental influences which may contribute to his best development.

In the classroom, pupils' interest in the work to be done is a good preventive of disobedience. From observation in fourth, fifth, and sixth grades, it was noted that the children were most attentive when they had a definite piece of work to do, when other children were giving short recitations, when they were called upon to give some kind of a demonstration such as locating cities on the map, and when the teacher called for discussion of their outside reading. They were least attentive when long recitations were given by one child and when other children came to the teacher to ask individual questions.

Both at home and in the classroom one very important factor in preventing disobedience is consistency in demands. Being sure of what to expect from the parent or teacher gives a sense of security to the child. The following quotation from *The Old Wives' Tale*⁴ illustrates the vacillating type of discipline frequently found.

He (Cyril) had apparently finished his home-lessons. The books were pushed aside, and he was sketching in lead-pencil on a drawing-block . . .

Constance (his mother) put a hand on his shoulder. "Finished your lessons?" she murmured caressingly.

Before speaking, Cyril gazed up at the picture with a frowning, busy expression, and then replied in an absent-minded voice

"Yes." And after a pause: "Except my arithmetic. I shall do that in the morning before breakfast."

⁴ Arnold Bennett, *The Old Wives' Tale* (Educational Edition), pp 259-261. Garden City, New York: Doubleday, Doran, 1928. Reprinted with permission of Doubleday, Doran and Company, Inc.

"Oh, Cyril," she protested

It had been a positive ordinance, for a long time past, that there should be no sketching until lessons were done. In his father's lifetime Cyril had never dared to break it

He bent over his block, feigning an intense absorption. Constance's hand slipped from his shoulder. She wanted to command him formally to resume his lessons. But she could not. She feared an argument, she mistrusted herself. And, moreover, it was so soon after his father's death!

"You know you won't have time to-morrow morning!" she said weakly.

"Oh, mother!" he retorted superiorly. "Don't worry." And then, in a cajoling tone "I've wanted to do that stag for ages."

She sighed and sat down in her rocking chair . . .

When he had finished (his supper), he refilled his glass with water, and put it next to his sketching-block.

"You surely aren't thinking of beginning to paint at this time of night!" Constance exclaimed, astonished

"Oh yes, mother!" he fretfully appealed "It's not late"

Another positive ordinance of his father's had been that there should be nothing after supper except bed. Nine o'clock was the latest permissible moment for going to bed. It was now less than a quarter to

"It only wants twelve minutes to nine," Constance pointed out

"Well, what if it does?"

"Now Cyril," she said, "I do hope you are going to be a good boy, and not cause your mother anxiety."

But she said it too kindly.

He said sullenly. "I do think you might let me finish it. I've begun it. It won't take me long."

She made the mistake of leaving the main point. "How can you possibly choose your colors properly by gas-light?" she said.

"I'm going to do it in sepia," he replied in triumph

"It mustn't occur again," she said.

Another factor in preventing disciplinary troubles is space — a place to play where the noise will not annoy adults and where there is freedom from constant adult supervision and suggestion. Playgrounds and recreation centers have proved very effective in lessening undesirable conduct among children of these ages and also in promoting skill in physical ability and practice in playing together without fighting and wrangling.

Persistence and negativism at puberty may be allied. If

such is the case it would be undesirable to suppress ruthlessly the latter lest persistence be likewise decreased.

SEX EDUCATION

In the relationships of children of this age to one another the sexual factor plays a part. Questions about sex frequently are suggested by pictures seen in newspapers and magazines, by motion pictures, and by new companions with whom the child may associate in this period. Unsatisfied curiosity about sex may lead to surreptitious discussion of these matters during recess or on the way to school, in secret circulation of obscene notes and pictures, and even in mutual inspection and exploration.

Teachers should not shut their eyes prudishly or become unduly agitated when confronted with such problems. These sexual stirrings are personality difficulties to be treated with the same detachment and practical realism as all other maladjustments.⁵

Children's questions about sex, at any age, should be answered truthfully and in a matter-of-fact way without secretiveness. The simplest, most direct answer that will elucidate the question should be given. In order to have this opportunity the parent or teacher must have the child's confidence. The adult can best secure and keep this confidence by being absolutely honest with the child, by taking time to talk things over with him, and by knowing his world so well that the suggestions they together evolve can be carried out. One mother lost the confidence of her daughter on the last point. "I don't talk things over with her," the girl said, "because she never suggests anything that works."

Boys and girls should know the essential facts about sex by the end of the fifth grade. If they have not acquired the necessary information by this time, they should receive such instruction. Specific emotional problems should be dealt with individually, and not in groups. Except under unusual conditions of rapport and objectivity, a separate course in sex

⁵Leo Kanner, "Types of Maladjustment in Children," *Personality Adjustment of the Elementary School Child*, p. 442. Fifteenth Yearbook, The National Elementary School Principal, Vol. 15, No. 6, July, 1936.

education is not advisable. In one school, the fifth-grade teacher has been able to give her pupils an insight into the way life begins by encouraging and supplementing their own observation of the families of animals which they themselves brought in for their nature collections. The children followed the life history of a variety of creatures, such as fish, white rats, rabbits, butterflies, and chickens.

The main facts of reproduction are summarized briefly in the revised edition of Bigelow's sex education;⁶ are pictorially presented by such a film as "The Gift of Life";⁷ and are explained simply and directly for boys and girls to read in de Schweinitz' second edition of *Growing Up*.⁸ Dennett⁹ has presented the information in useful form to adults.

On the other hand, sex education is not entirely a matter of facts; it is largely a matter of emotion and feeling. It is important that teachers be qualified to deal with these questions, and all teachers are not thus qualified. The subject should be handled by an emotionally mature person. If a child, truly troubled about some sex matter, comes to a teacher and that teacher refuses to discuss it with him, telling him to go to the doctor or to the biology teacher, the child may feel that he has mentioned a taboo subject and that something is wrong with him because he is concerned with the problem.

Undesirable sexual habits can best be dealt with in individual cases whenever they require attention. Instruction concerning masturbation, for example, should be similar to instruction in any health habit. Underlying motivation of the behavior must be modified. The conditions in his environment must be changed. The child may need to give

⁶ Maurice A. Bigelow, *Sex-Education* (revised edition), pp. 148-155. New York: The American Social Hygiene Association, 1936.

⁷ The film "The Gift of Life" (4 reels) may be purchased or rented from the American Social Hygiene Association, 370 Seventh Ave., New York, N. Y.

⁸ Karl de Schweinitz, *Growing Up* (second edition). New York: The Macmillan Company, 1935, p. 95.

⁹ Mary Ware Dennett, *The Sex Education of Children*. New York: The Vanguard Press, 1931.

more attention to cleanliness, acquire more vital interests, or learn how he can succeed more often in his work. In school a child who has this habit should be occupied in interesting work and play during the day. Similarly at home he should carry out various projects and activities, such as the constructing of a radio set, roller skating or ice skating, sleigh riding, being responsible for a newspaper route, raising chickens, running errands for a local storekeeper, reading books of adventure and scientific discoveries, making collections, and other activities in which he can engage successfully. To deprive the child of his few sources of satisfaction because he has failed to break the habit is to aggravate the difficulty and to decrease the chances of a successful solution of the problem.

INATTENTIVENESS

Inattentiveness, like laziness, is a blanket term; it is a symptom of a great variety of underlying causes. Too often, teachers and parents label an inattentive child as lazy and go no further in their diagnosis.

Among the factors that may enter into inattentiveness in any particular situation are the following:

1. Physical defects such as poor hearing, vision.
2. Illness, due to which the child's attention may be distracted by pain and general bodily discomfort.
3. Fatigue, a condition which may reduce the child's ability to concentrate.
4. Hunger, like illness, a distracting influence responsible for some of the inattention on the part of children who come to school without breakfast.
5. Inability to grasp what is being taught. Too often children are blamed for inattention when they are quite unable to comprehend what is going on.
6. Lack of interest which may result when work is too easy. There is no incentive for the well-informed, alert child to pay attention to things he already knows.
7. Negligible degree of purpose and inability to select impressions that have a bearing on his goal.

8. Preoccupation with matters that seem to the child more important than the school work. It may be some event at home, some imaginary event, or sex fancies that have usurped the center of his attention.

In view of these multiple causes of inattention, it is obvious that each case must be treated differently according to the factors involved.

STEALING

To label a child a "thief" is neither descriptive nor helpful. There are nine and fifty kinds of dishonesty — more or less. Like inattention it is a symptom of some underlying difficulty. The difficulty may be constant even though the child may be dishonest in different ways. A fifth-grade child who cheats on an examination or a sixth grade boy who steals a dollar from the teacher's desk cannot properly be labeled as a dishonest child. He may be honest in many other ways. Why did he fail in that one situation? What can the parent or teacher do about it?

Causes of Stealing. — As with other problems, the first thing to do is to try to discover the cause of the dishonest act. One cause may be an underdeveloped sense of the meaning of possession — the difference between "mine" and "thine" — which should have been built up in the preschool period and which is usually learned in the nursery school. Children of school age need experience in working for their possessions, of buying them with money they have earned. To do this helps them to recognize the rights of others to the possessions they have earned. Children need to be taught to feel responsibility for possessions held in common and to know that "finding is not keeping."

Another reason why children steal is that they are very much in need of a certain object and know of no other means of obtaining it. Sometimes it is food. Hunger is a powerful urge. Stanley Hall said a good table is one of the best preventives of stealing. Sometimes a child feels the need of clothing or money in order to maintain his stand-

ing in the group and thus satisfy his strong desire for social approval.

Sometimes stealing is an attempt to relieve tension in other areas. Cases of stealing which were associated with sex experiences have been reported. Stealing may be an attempt to show off or to win friendship by having something to give to others. A child who feels insecure in other relations may find release in stealing.

Frequently the cause may be traced back a number of years. Stealing may first have been tried as an experiment, the theft remaining undetected. Nothing happened. No dissatisfaction was attached to the act. It is, therefore, repeated. Real stealing of the most insignificant articles should never be overlooked. To overlook is to encourage. On the other hand, its importance should not be exaggerated.

Kleptomania — the desire to steal objects for no rational end — is sometimes found among children. Children with this obsession may steal objects of no value. One girl stole the belts of other girls' suits. Twenty-three belts which were of no possible use to her were found in her possession.

An important underlying cause of dishonesty which special tests of honesty have detected is lack of inhibition. The child who steals is frequently one who has never learned to refrain from doing anything he desired to do.

Treatment of Stealing. — Obviously, the first step is to find the specific causes. If the cause is an undeveloped sense of ownership, the child can be led to put himself in the others' place so that he may realize how he would feel to have something he had made or bought with his own money taken from him. By this means the attitude toward stealing may be changed and sympathy for the person who has been robbed, established. This method is educationally more valuable at this age than the method of keeping everything under lock and key.

The treatment of Peter ¹⁰ illustrates a method of recogniz-

¹⁰ Helen T. Woolley, "Case Study No. II, Peter: The Beginnings of the Juvenile Court Problem," *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXIII (March, 1926) 9-29. Quoted by permission.

ing the fault without unduly magnifying it. Peter hid in his locker a purse which belonged to a little girl. The teacher

. . . took Peter to his locker, showed him the purse, and asked him if he knew to whom it belonged. Peter said that he did not. She then asked him if he knew who put it there, and he said no. Miss Henton (the teacher) then said, "Well, I know to whom the purse belongs, Peter. It belongs to Alice. Now wouldn't you like to give it back to her?" Miss Henton reported afterward that at her suggestion of restitution, a really childlike smile broke on Peter's face for the first time since he had been in the school. He had often been caught in misdemeanors and punished, but this was his first experience in being caught and helped out of his plight legitimately. He said he would like to return the purse, and did so at once.

If the child is in actual need of the articles which he steals, he may be shown how he can supply himself in a legitimate way with the things he needs. Frequently, helping a child to earn a steady income has prevented further stealing. The case of Fritz¹¹ illustrates this method of treatment. Ten-year-old Fritz was caught taking money from a milk bottle. His mother dealt vigorously with him and for a time there was no similar occurrence. Later Fritz stole a box of candy.

He said he had been "with older boys who took things that did not belong to them," and "as he stood by waiting for a friend to make a purchase, he had been seized by the desire to do as these others had done."

The visiting teacher won the boy's confidence and tried to persuade him to tell his mother about the theft. His mother whipped the boy in spite of the visiting teacher's effort privately to convince the mother that so doing might destroy the boy's confidence in her or attach dissatisfaction to his response of telling his mother about his activities.

A plan was devised of paying for the candy. Earning the money was to be Fritz's responsibility.

The visiting teacher persuaded the grocer from whom

¹¹ Mary B. Sayles, *The Problem Child in School, Narratives from Case Records of Visiting Teachers*, pp. 171-175. New York. Joint Committee on Methods of Preventing Delinquency, 1925.

Fritz had stolen to offer Fritz the job of sweeping the sidewalk in front of the store every morning. For this work Fritz received a credit of five cents on his account. "It was a proud day for the youngster when, the stolen box of candy paid for in full, he was engaged to continue the same service for a cash payment of five cents a day."

Fritz now kept the money for his own expenses. He joined a club at the Y.M.C.A., went swimming, played basketball, and substituted these new interests for his previously less wholesome associations.

Healy¹² makes clear by means of case studies the relationship of stealing to mental conflicts which find an outlet in this specific form of offense. The treatment in these cases obviously begins with the underlying conflict.

In some cases in which oversevere or unscientific discipline in the home made changes in the child's behavior impossible, the most effective treatment was a complete change of environment. False accusation, of course, should be strictly avoided.

LYING

Causes. — Knowledge of the specific causes of lying is a prerequisite to preventing it. In an experiment¹³ with children of this age, lies told for a social purpose such as keeping secrets, protecting others, and preparing surprises, constituted 23 per cent of the total. Girls gave twice as many examples of this type of lie as boys. Among children from nine to twelve years of age the number of lies told for a social motive decreased by more than half while the asocial and antisocial lies increased slightly. A characteristic situation is: "My friend told me a secret, and I had to promise her not to tell it to her sister. Later on her sister asked me what my friend had said. I answered: 'She asked me why I wasn't at school' I had to lie in this case."

¹² William Healy, *Mental Conflicts and Misconduct*, Chap. XIV. Boston: Little, Brown and Company, 1923. See also William Healy et al., *Reconstructing Behavior in Youth*. New York: Knopf, 1929.

¹³ B. E. Tudor-Hart, "Are There Cases in Which Lies Are Necessary?" *The Pedagogical Seminary and Journal of Genetic Psychology*, XXXIII (December, 1926), 586-641.

The remainder of the lies (77 per cent) resulted from the demands of other everyday situations. "The girls gave a much larger number of conventional lies than the boys, particularly in their ninth and tenth years." Almost half of the examples were lies which they had observed adults using. This experiment with Viennese and American children reveals the influence of adult example on their behavior. It also shows that the actions of adults have a much greater effect than the advice they give young people, and that fear of social disapproval is at the basis of conventional lies.

Fear of physical pain or deprivation prompt those lies which arise out of situations in which the child is in want or in danger. The following are examples of lies told to escape punishment: "Once I stole some sugar; when the coffee was served mother noticed it, and said, 'A piece of sugar is missing,' and I would have caught it. So I had to lie and say it was not me. But mother said, 'Go along, who would have taken it if not you?' And I would have caught it hotter so I had to lie like anything." Another child said: "Once I lied to my mother; she told my father and I had to lie again because I was so frightened." A boy argued in this way: "I steal something from a man. He asks me, 'Have you stolen it?' Why don't I say yes? Because if I do I will be brought before the court and punished." When a child copies he will not tell the truth for fear of being punished. When he gets a low mark he lies to his parents about it for fear of being punished by them. Thus fear lies at the basis of many children's falsehoods.

Suggestibility is another important factor in lying. Very frequently children will tell a lie before they stop to think, especially if the question has been worded in such a way as to suggest a particular answer.

Innumerable situations in everyday life favor lying. One boy reported that his "mother was so fussy that he could only avoid her plaguing him by telling lies." Care should be taken not to give a child a feeling of guilt with respect to a falsehood in which he has been detected. The emphasis

rather should be on helping him to learn better ways of meeting everyday situations and crises.

At this age a child may lie to parent or teacher when he would not to a member of his own gang. Hence it would be helpful if the standards of truth, based on community of interest, prevailing in the gang could be broadened to include the school and the home.

In all grades from the fourth to the twelfth are found children who consistently tell the truth and others who tell falsehoods when faced with a trying situation. Why does the untruthful group lie? Intelligence tests have shown that it is not always because these children cannot think clearly or in abstract terms. In most cases tests of moral judgment have indicated that it is not because they lack moral discrimination. The child's behavior can only be understood by a study of the conditions under which it occurred.

Treatment.—What can be done about lying? In the first place, the habit of lying may be prevented by detecting a child's first attempts, and making him realize that "advantage rarely comes of it" — that there are usually better ways of meeting situations. He must learn that lying usually makes a bad situation worse. A teacher or parent who is "easygoing" or indifferent in detecting falsehoods helps to strengthen the habit of telling lies.

In the second place, a habit of fearlessness needs to be built up. Social approval should be given for moral courage. An appeal may be made to children's admiration of fearlessness and courage, and the relationship between physical courage and moral courage should be pointed out. The story about George Washington and his colt illustrates both of these types of bravery, fearlessness in riding the colt and fearlessness in telling his mother the truth about the colt's sudden death.

Specific causes demand specific treatment. If a child lies about his own or his father's accomplishments in order to make an impression on someone, an opportunity should be devised whereby he can satisfy his desire for approval and mastery in some other way. If a child tells lies through fear

of consequences, he may be encouraged in truthfulness by a more just and understanding treatment of his offenses. One investigator found more lies were told by children from homes in which the punishment was severe. A very suggestible child may lie without really meaning to, and should not be hurried in his answers, but be encouraged to think before he speaks. In other words, children's lies cannot be understood or treated apart from the total situation.

CHEATING

Honesty is not an entity. It consists of many responses to many different situations. A child may be honest in an arithmetic examination and dishonest in playing games at a party, or *vice versa*. Dishonest practices are prevalent and seem to increase with age. Education, apparently, does not lessen the amount of deceit.

Causes of Cheating.—Why do children cheat? Is it because they do not "know any better?" Probably not. In the experiments thus far performed, little relation has been found between moral knowledge and conduct. Is cheating due to lack of intelligence? Bright children as well as dull children sometimes cheat, although cheating, under present school conditions, is more prevalent among the mentally retarded and the scholastically incompetent. Cheating may be a form of lack of inhibition. Children who cheat have been found to be more suggestible. Hartshorne and May¹⁴ summarized the results of the studies of factors in deceit as follows:

It is clear that there are significant differences between the extremely honest and the extremely dishonest in respect to intelligence, home background, and school deportment, and possibly in the matter of race or nationality and sex. It is not clear, however, that such facts, whether taken separately, added together, or considered in certain combinations, can account for deceit in individual cases, although, as illustrated, a close scrutiny of the details may lead to a better understanding of the subject . . . and may suggest very defi-

¹⁴ Hugh Hartshorne and Mark A. May, *Studies in the Nature of Character, I. Studies in Deceit*, p. 313. New York: The Macmillan Company, 1928.

nite ways of correcting the conditions that may possibly be leading to the practice of deceit

Some classrooms promote cheating by placing an exaggerated emphasis on the importance of marks in tests. This emphasis makes some children feel that any means may legitimately be used to prevent failure. In many schools marks are now being eliminated and the child's individual record kept in terms of observed achievement and study habits and results of standardized tests. Instead of "report cards," letters are sent to parents appraising the specific progress the child has made. Cheating appears to decrease under teachers who are more concerned with the best development of children than with maintaining school standards in terms of marks. When marks are emphasized, and teachers scold and criticize, a classroom atmosphere conducive to cheating is created.

In these grades the consequences of a child's first attempts to cheat may determine, to a large extent, his future attitude toward cheating. He may try cheating at first as an experiment. If he is "caught in the act" and dissatisfaction is connected with it, he will tend not to repeat it. He might be spoken to somewhat in this manner: "This (an arithmetic paper for example) is not your work. It is Bobby's work. This score of 90 is a good score, but it is not your score. It is Bobby's score. Your score today is 0. See how badly that looks on your record (show graph of daily scores). The line goes way down to the bottom today. Which would have been better—five correct examples which you did yourself giving a score of 50 or this paper you have handed in giving a score of 0? (Point to each place—50 and 0 on the graph.) In which case would you have learned more about arithmetic? Come to my desk (mention some time) and let us see what is making the problems difficult for you. We will find out how you can make a score of 90 by solving the problems by yourself." Hartshorne and May found cheating generally prevalent in some classrooms and not in others. When there is a sporting chance of "getting away

with something," exuberant children will take it, unless the morale established in the classroom is effective enough to counteract the other tendency.

SMOKING

Curiosity, imitation, desire to "do as the Romans do," may lead to smoking in this period. The same impulses may just as well lead to interest in nature study, science, and reading, and to participation in worthwhile clubs, teams, and societies. If the gang is interested in Scout activities, problems of smoking are not so likely to arise. As in lying, adult practices are an important determiner of the child's attitude.

Occasionally, at this age, smoking may be tried because the individual has failed to adjust himself to some phase of his environment, as his school work, his family, or his social group.

FIGHTING

Michael Pupin, the great physicist who rose from immigrant to inventor, recounts a number of fights he had as a boy. One of them, on the day he landed in America, was with a boy bigger than himself who made fun of his shabby appearance. He says he has been fighting ever since. Every vigorous personality is a fighter. Theodore Roosevelt comes to mind immediately. Browning writes, "I was ever a fighter. One fight more, the best and the last." The tendency to fight is a motive force too valuable to be repressed. It reinforces other drives in overcoming difficulties. Boys should not be forbidden to fight but taught when to fight and what is worth fighting for.

If two fifth-grade boys on the playground start fighting, what should the teacher do? One experienced teacher offered to referee the fight and see that the rules of the game were observed. This prevented any serious physical injury, and the teacher found that frequently the boys' anger evaporated and they stopped fighting entirely. If there is little danger of serious injury, non-interference often is advisable.

Children need practice in settling their own disputes. If they pass through a stage of conflict in this period, they are likely to arrive at the conviction that physical combat is not the best way of settling disputes, and that coming to a peaceful understanding with one's enemy is often more advantageous. Incidental comments by the teacher as to the demands of courtesy, better ways of settling individual and group differences of opinion, consideration for the other person's point of view, and the use of combative energy in more civilized and constructive ways, supplement the children's own experience of fighting.

Careful planning prevents much unnecessary squabbling. Games with definite rules that everyone knows, a referee to settle doubtful points, and plenty of suitable and interesting work, help to eliminate bickering and quarreling. Strenuous athletic contests use up fighting energy in an orderly, organized way. Baseball, football, tug of war, volley ball, hockey, and other team games are valuable not only for giving an outlet to the physical energy but also for developing co-operation and loyalty to a group. Roosevelt, as police commissioner in New York City, found that organized boxing proved a satisfactory substitute for various kinds of undesirable activities.

Teaching what to fight for is necessary in this period. Fighting for the protection of the weak, for a just cause, and for the overthrow of a bad habit should be established as ideals.

The bully on the street and on the playground always is a problem. Sometimes his attitude can be changed by appealing to him to help protect the weak and helpless, and by giving him a position as monitor or leader which requires a different manner toward other children. Occasionally, if he is teased and bullied himself, he learns how unpleasant it is and thus is better able to put himself in the other person's place. Sometimes interest in the other person can be aroused and an entirely different attitude toward him created. Once in a while a boy spends the afternoon tor-

menting other children because he has not found anything else so interesting to do.

STUTTERING

It has been estimated that about 1 per cent of the school population stutters, that it occurs "more frequently among mentally retarded than normal children, and that it is four or five times as prevalent among boys as among girls. Most stuttering begins before school age. In Edinburgh it was found to begin before the age of eight years in 93 per cent of the cases."¹⁵

There is considerable evidence that stuttering is associated with cerebral dominance. An analysis of the cases of 700 stutterers¹⁶ showed 61 per cent to be ambidextrous as compared with only 5 per cent of the normal population; 57 per cent had a left-eye dominance, which likewise is non-typical of the normal population.

Curiously enough, stutterers, under controlled conditions, have been found to be more talkative than non-stuttering children.¹⁷ They used more words in responding to the ten ink blots of the Rorschach test than children who did not stutter.

EMOTIONAL ADJUSTMENT

An undesirable kind of emotional response is the consequence of lack of ability to satisfy basic needs legitimately or to meet difficulty effectively. The so-called basic needs have been stated frequently and usually include (1) the vegetative appetites and drives, namely thirst, hunger, bodily comfort, rest, sex expression; (2) the desire for activity, both mental and physical, in accordance with the individual's capacity; (3) the desire for affection, recognition, security,

¹⁵ George Seth, "The Problem of Stuttering: The Present Position," *Edinburgh Medical Journal*, XLI (August, 1934), 497-506.

¹⁶ Bryng Bryngelson, "Sidedness as an Etiological Factor in Stuttering," *The Pedagogical Seminary and Journal of Genetic Psychology*, XLVII (September, 1935), 204-217.

¹⁷ H. Meltzer, "Talkativeness in Stuttering and Non-Stuttering Children," *Journal of Genetic Psychology*, XLVI (June, 1935), 371-390.

and status and dignity as a person. Boys in grades four, five, and six want most of all to be strong and increasingly desire to be bright. Girls in the fourth grade appear to desire to be pretty more ardently than they do in the fifth and sixth grades. Their dislike for certain persons and their aversion to boredom tends to increase with age. Emotion may be manifested in many different ways. Flushing, rapid breathing, and other physiological responses may appear in anger, fear, or delight. One child may become pale in anger; another flushed. A preadolescent boy or girl may respond to frustration and difficulty by withdrawal, or by uncalled-for aggression, or by an active endeavor to solve the problem.

Fear — Fear is an individual's natural response to a situation with which he is unable to cope. As children grow older, their fears tend to become more imaginary; they tend to become increasingly afraid of things that might happen. Fear during the preadolescent, adolescent, and adult years may take the form of timidity, stage fright, or social withdrawal. Intelligence alone does not cast out fear, though superior children may conceal their fears more successfully than mentally retarded children.

During the preadolescent years the most important obligation of parents and teachers is to promote in children, so far as possible, the ability to meet difficulties constructively and successfully. If a child is awkward and afraid in social situations, he may gradually acquire skill by participating in congenial small group activities. Thus he may learn from children who have no fear of social situations because they feel adequate to meet them. Increasing the child's competence is better, in many cases, than delving into remote causes of the fear.

Giving children reasons why they should not be afraid frequently is unsuccessful, partly because many fears are not rational and partly because the adult may not touch upon the child's real source of fear. Trust and confidence in the parent, however, add emotional weight to his explanations.

Anger. — Anger is an aggressive response to difficulty. It is the opposite of fear, which is retreat. Preadolescent boys

and girls are confronted by blocking and thwarting along various lines. They appear to go through a period of open resistance. Obstinacy sometimes is evoked by unskilful treatment of children. During these years, however, it is more often a phase of normal growing up and the child's experimental attempt to ascertain the most effective methods of getting what he needs. A certain amount of resistance is a sign of healthy development in many children, and as such, it should be welcomed.

Anger may be manifested in various ways. The thwarting caused by failure in school work may come out in the form of dislike for the teacher, or imaginary triumphs over the person who is disliked, or in thoughts of dying and being mourned. The treatment of anger becomes more and more difficult as its most natural overt expression takes less easily recognizable forms.

An outburst of anger frequently results from an accumulation of irritations, none of which alone appears to be sufficiently provocative as a cause. To the adult who is not aware of the sequence the child's anger seems quite unreasonable.

The child's bodily condition is another factor that should be considered in studying any of his emotional responses. When a child is tired or irritated by such physical discomfort as pain, he is more susceptible to temper outbursts.

These conditions precipitating anger may be in part eliminated from the child's environment. Frequently the adult can yield judiciously, in an intelligent way, without abandoning the essential points. The area of friction may be reduced as much as possible. This may be achieved by providing tasks at which the child can succeed and either by reducing the difficulty if the goal of achievement obviously has been set too high, or by helping the child to discover for himself a way to overcome the obstacle. Lack of competence frequently is an important contributing cause of anger. The response of an adult to a child's anger should be sympathetic, objective, and unemotional. To respond to anger with anger, is to intensify the problem. This does

not mean that an adult should never show indignation. There is a place for righteous wrath. But in every case it should be directed against the act, not against the child.

Jealousy. — Jealousy contains some elements of both fear and anger. The jealous child doubts his own abilities. There is a thwarting of his wishes and an acknowledgment of defeat.

In cases of jealousy invidious comparisons should be avoided. Neither parents nor teachers should have "pets." It is a mistake to show favoritism with children or to give any one child undue attention. To show dislike for a child and make him feel inferior may be more injurious than hitting him.

A recognition of the superiority of other children in certain respects cannot be eliminated. Children notice one another's work. Gifted children who have been promoted or who receive special privileges may make other children more keenly aware of their limitations. Therefore developing a right attitude toward one's capacity should be one of the most important objectives of education. An attitude of frankly acknowledging that there are certain things one cannot do and certain things one cannot be should be substituted for jealousy of others who can achieve these things. Personal goals must sometimes be lowered, the denominator of the ratio of ability to ambition must sometimes be reduced in the interest of good adjustment.

SPECIAL PROBLEMS OF NON-ACADEMIC CHILDREN

Identification of Mental Retardation — Children in the lower end of the distribution of intelligence who find themselves in the public schools are designated as dull, *dull-normal*, *non-academic*. They have intelligence quotients ranging from below 70 to 90. The idiots and low-grade imbeciles whose intelligence quotients are below 50 generally are recognized as special cases to be educated in special schools or classes. They cannot profit by the education

offered in the public schools and, without proper supervision, may be a menace to other children.

However, the feeble-minded group from about 50 to 70 I Q. are to be found in the schools. The law requires them to attend and inappropriate education makes them conscious of their deficiency. Their mental handicap frequently is not recognized at first and they are unjustly blamed for laziness, inattention, and disturbing behavior. Under a regime that provides the kind of education suited to their abilities, they become happy and useful members of society.

In infancy their delayed motor co-ordination in learning to walk and talk and their backwardness in adapting themselves socially to other children and to adults is often overlooked. Even in the first three grades their inaptitude for book learning may not be recognized. From the fourth grade on, however, their failure to meet the school standards, even when they spend more than the average time in study; their immaturity in social relationships, their retardation in verbal expression and information; their inability to learn games, to make generalizations, to profit by experience, and to keep out of trouble, all point toward mental retardation. This impressionistic information should be checked by a thorough, expert physical and psychological examination, and, in certain cases, by a psychiatric examination.

Suitable Work for Mentally Retarded Children. — There are many important things for these children to learn. They should be familiar with certain concrete facts, have sufficient reading ability to find their way around, form habits of cleanliness, be able to protect themselves and others from communicable diseases, choose the right kind and amount of food, perform other health habits satisfactorily, learn to use money wisely, engage in wholesome amusements, and acquire skill in sewing, woodworking, and other kinds of useful work.

They should have opportunity to learn a trade. A large number of different occupations are open to individuals on various levels of intelligence. Manual laborers, tradesmen, cobblers, cooks, tailors, painters, bricklayers, and truck

drivers are successful in spite of low scores on verbal intelligence tests. There is, however, a "critical range" below which an individual is not likely to succeed in certain occupations. There is also a "critical range" above which a person may be too intelligent for his job and fail to find satisfaction in it. It has been demonstrated that a large proportion of the high-grade mental defectives can become economically independent and happy in their work.

It is far worse to allow a child to go on for years trying to do something that is beyond his capacity and continually failing, than to say to him, "The tests which you have taken and the work you have done thus far in school indicate that you could do — (mention a number of mechanical types of work for which there are openings in the locality). You would probably be happier doing these than in going on to the academic type of senior high school." The most skilful counselor would create situations in which the child eventually would come to this conclusion himself. Such advice should be given only to pupils whose I.Q., calculated on the basis of several reliable tests given by experts, is below 85 and whose school records have shown effort but consistent lack of success in academic subjects.

SPECIAL PROBLEMS OF GIFTED CHILDREN

Identification of Gifted Children. — Children recognized as gifted may be intellectually superior or may possess special talents or abilities. Probably the general population of the United States contains approximately as many physically mature individuals above 130 I.Q. as below 60 I.Q., the latter representing ability comparable to that of children eight and a half years old. The major researches on gifted children,¹⁸ while recognizing the continuous distribution of

¹⁸ Barbara S. Burks, D. W. Jensen, and Lewis M. Terman, *Genetic Studies of Genius*. Vol. III. *The Promise of Youth; Follow-up Studies of a Thousand Gifted Children*. Stanford University, California. Stanford University Press, 1930.

Leta S. Hollingworth, *Gifted Children. Their Nature and Nurture*. New York: The Macmillan Company, 1926.

Lewis M. Terman, *et al*, *Genetic Studies of Genius*. Vol. I. *Mental and*

ability, have supplied valuable information about children rating above 130–140 I.Q.

The observing teacher can easily distinguish some of the characteristics of bright children — their “satiabile curiosity,” as Kipling calls it, their wide knowledge, their quickness in comprehending, their good memories, their large vocabularies, and their interest in the more abstract type of school work. Gifted children act “old for their years” and accept a more mature kind of responsibility than do average children. Two girls, twelve and fourteen years old, of high intelligence, came to school in a large city and took entire responsibility for the management of the apartment where they and their chaperon lived. Contrary to popular opinion, intellectually gifted children are usually of superior physique for their age, they tend to be in good health and socially acceptable. They play a wide range of games, are well liked by other children and, unless of exceptionally high intelligence, tend to be selected as leaders. Precocious in preschool years, they tend to show superior accomplishment throughout the school years and in later life. The gifted children in Terman’s group came predominantly from the upper social and economic levels, while only 7 per cent came from the semi-skilled or unskilled laboring class. They had numerous eminent relatives.

These characteristics apply to the group as a whole. Deviations from these central tendencies are found in individual cases. One intellectually gifted child may prefer solitary pursuits. Two members of Terman’s group of 1,000 gifted children became definitely psychopathic, one was committed to a reform school, and a number for one reason or another had few accomplishments to their credit. These cases, however, were relatively few compared with the general population and were far outweighed by individual cases of

Physical Traits of a Thousand Gifted Children Stanford University, California: Stanford University Press, 1925.

Lewis M. Terman and Barbara S. Burks, “The Gifted Child” in Murchison’s *A Handbook of Child Psychology* (second edition, revised), pp 773–801. Worcester, Massachusetts: Clark University Press, 1933.

exceptionally high achievement, stability of character, and personality balance.

Education of the Gifted.—Whether the education of children takes place in special classes or in a more heterogeneous group, the teacher must recognize the special aptitudes, interests, and previous accomplishment of each pupil. In special classes the needs of the gifted group can be met more easily than in large, heterogeneous classes. "Few cities which have established special classes for gifted children have later abandoned them." The special class is one means of stimulating gifted children to do their best. Grouped with children equal to them in intelligence and under the leadership of an alert, gifted teacher, bright children make progress commensurate with their ability. One parent of a child placed in a special class for gifted children wrote:¹⁹ "Tom has never put an effort into any of his work until this year, of his own accord. His improved record is incidentally affecting the whole attitude of the boy. The class has eliminated a superiority complex. He is no longer the only one who gets 100." Gifted children should have a large measure of individual freedom to plan their own education, work on the more elaborate projects, engage in work more or less akin to research, and be excused from all unnecessary drill. In the classroom and at home a wide variety of books should be available to them, trips to museums and excursions should be part of their curriculum, and working out problems on their own initiative should be encouraged.

Habits of working below capacity, of daydreaming for want of something more interesting to do, and of "getting by" on superficial quickness and clever guesses should be nipped in the bud. Gifted children should be encouraged to set goals and immediate objectives for themselves commensurate with their ability and to work toward them. They should be keenly aware of the obligation to society that their special gifts entail.

¹⁹ Lewis M. Terman and Barbara S. Burks, "The Gifted Child," in Murchison's *A Handbook of Child Psychology* (second edition, revised), p. 790. Worcester, Massachusetts: Clark University Press, 1933.

Musical Ability — Of the special gifts, musical ability and ability in representative drawing are not necessarily closely related to general intelligence. Transcendent achievement in any line, however, usually is associated with high general ability. In any kind of musical performance many physical and psychological functions are involved. An inventory of simple psychological elements needed for musical ability may be made by means of the Seashore tests of pitch, intensity, time, consonance, rhythms, and tonal memory.²⁰ These cannot be applied with accuracy until the child has attained a mental age of approximately ten years. The results of the tests, considered in connection with teachers' observation of the children's response and proficiency in music as well as their own expression of like or dislike for it, supply a useful prognosis of this ability. "The outstanding musician will be he who combines these totally or partially uncorrelated elements in high degrees of excellence in each."²¹

COMPLEXITY OF PROBLEMS

Problems rarely occur singly. Sometimes a dozen different problems may be found in one individual. One child may have low intelligence, a speech defect, unco-operative parents, heavy outside work to do, a tendency toward stealing and lying, and other difficulties and personality defects. Frequently, however, one major problem may be discovered. If this is successfully solved, the other problems, which are largely by-products of the major difficulty, will disappear.

The intelligent parent and the intelligent teacher will want to know the circumstances under which certain behavior occurs. Sometimes stubbornness, for example, indicates a laudable independence; sometimes it is a mask for fear; occasionally it is a manifestation of a serious mental

²⁰ C. E. Seashore, *The Psychology of Musical Talent*. New York: Silver, Burdett and Company, 1919.

²¹ Leta S. Hollingworth, "The Child of Special Gifts or Special Deficiencies," in Carl Murchison's *A Handbook of Child Psychology* (revised edition), p. 844.

disorder. Wile²² concluded from his follow-up study of two clinical groups of children that the habit difficulties of children under ten years of age are not very likely to carry over into adolescence, and that "the presence during the pre-adolescent state of self-inhibiting behaviors of the flight type suggests a greater likelihood of continuity in the adolescent than do the aggressive fight types of behavior"

From the study of children's difficulties in adjustment, it is obvious that a prescription for the treatment of different kinds of problems cannot be given. Each child must be studied individually in his environment.

QUESTIONS AND PROBLEMS

1. How would you deal with a child "who continually did mean, underhand things on purpose"?

2. Observe a teacher or parent who has a fine relationship toward her children, and try to analyze the elements in her manner and activities in the classroom that are responsible for the desirable responses on the part of the children. Find out the kind of education she has had.

3. Work out a plan for stopping the practice of disfiguring the toilet rooms with sex pictures and writing.

4. Make and apply a plan for improving the reading of a child who is having special difficulty.

5. One principal told his teachers never to leave anything around which the pupils might steal. Do you agree with this policy? Give reasons for your agreement or disagreement.

6. Report cases of failure in dealing with theft, and suggest the probable causes of failure and a method that would have been more successful.

7. Study lies children have told you and try to discover the causes. How many of the lies might have been prevented by a slight modification of the situation?

8. Give examples of lies which were plainly due to the suggestive wording of the question.

9. Keep a record of the causes of tardiness in a given class, and the success of the measures taken to combat it.

10. What do boys of these ages fight for?

11. What undesirable consequences, if any, have you observed to result from fighting?

²² Ira S. Wile, L. Neary, and R. Davis, "The Continuity of the Neurotic Processes," *American Journal of Orthopsychiatry*, IV (January, 1934), 49-72.

12 What special work and special methods of teaching could you use for three over-age dull children in a class of forty?

13. How may superior children be provided for in a class of average and dull children?

14. Outline a plan of study and treatment for a "lazy" boy

15. If possible visit a child guidance clinic. Note the problems for which the children of these ages are referred, the methods of diagnosing the difficulties, the treatment recommended, and the relationship existing between the child and the psychologist, psychiatrist, or social worker.

16 Show how this chapter, instead of being organized under problems that teachers and parents now commonly recognize, might have been organized under a description of normal development of children.

CHAPTER XXI

CHILD STUDY AND GUIDANCE IN THE ELEMENTARY SCHOOL

THE TASK OF GUIDANCE

Individual development and guidance of children is the task of education. Without guidance few children five to twelve years of age are capable of critical insight into their strengths and weaknesses, their needs and capacities. Without guidance the choice of a curriculum appropriate to the child's stage of readiness is impossible.

The educator with the guidance point of view sees each child as a bundle of possibilities, as an individual with potential capacities, special talents, problems, and needs. He sees the school as a place in which children's potentialities are discovered and where such changes are made in the objectives of education, in materials and methods of instruction as are needed to develop these potentialities.

It is one function of guidance to make certain that gifted children develop their special abilities and talents in the service of society as well as for their own happiness, and that handicapped children capitalize their assets and find joy in work. No child should be handicapped by health defects which can be remedied or by destructive habits of thought or feeling.

Thus guidance is inextricably enmeshed with the curriculum, with instruction, with community agencies, with the social order. All these influences help the child to develop in body, mind, and character, through his own efforts, to the optimum of his capacity for growth.

PROCESSES OF GUIDANCE

There are two main processes in guidance which may be designated as *appraisal* and *adjustment*. *Appraisal* is the

process of child study, of understanding the child *Adjustment* refers to the process of "doing what that study shows to be desirable and necessary."

The appraisal of children in the preadolescent years involves a knowledge of the instruments with which to measure pupil behavior and background, the meaning of the facts obtained, and the ability to record them in useful form. The study of a particular child involves a knowledge of the physical, emotional, mental, and environmental factors that have contributed to his development. Some of the methods of becoming acquainted with these features have already been described in previous chapters¹. Accordingly only a few additional suggestions appropriate to the upper elementary years will be included here.

Observation — Observation in this age period still remains one of the most important technics of child study. In the course of his daily contacts with pupils in the classroom, halls, playground, or on the street, the teacher has the opportunity to note many of the individual's physical, mental, and emotional characteristics. Mouth breathing; visual defects; unusual or undesirable responses to failure or success, to criticism or praise; expressions of anger, jealousy, and fear; oversensitivity or indifference — these and many other characteristics may be discovered through observation. Such information contributes to the teacher's understanding of the development of growing children.

Home Visits and Interviews with Parents. — A great deal may be learned from observation of parents and children in the home and even from parents' visits to the school, without in any way appearing inquisitive or prying. If a sympathetic relationship with parents has been established, additional information may be obtained in the course of conversation with them. Parents usually respond co-operatively to such questions as: "Do you think there might be anything in the child's home life that would help the school to understand him better and make more adequate provision for his needs?" "Do you have any reason for believing

¹ See Chapters XII and XVII

that he is not as happy at home as you would want him to be?" "Do you have any suggestions as to ways in which the school can help him most?"

With his present teaching load, the teacher does not have time to go to the home of each pupil, nor is the home visiting, under such conditions, the most fruitful endeavor to which he can devote his time and energy. The services of the visiting teacher are invaluable, but the small number of visiting teachers cannot possibly perform the service adequately for a school system.

A less satisfactory method of eliciting information about home conditions is the questionnaire. Its use appears to be necessitated because of the dearth of special service. Questionnaires must be introduced with extreme tact and should not go beyond the information required for understanding the child. Needless to say, such information should be kept in strictest confidence.

Interest Questionnaires.—Interest is an ally of learning and should be considered in any adequate attempt to understand a child. It is doubtful, however, whether significant information can be obtained by submitting a check list of items to classes of children. There is a natural inclination on the part of individuals of all ages to check the items that will make a good impression. Docile children aim to please; dull children are tempted to check items without fully recognizing what their checks mean. Moreover, to generalize from questionnaire results regarding children's interests is difficult because a child's interests change when the situation, the group, and the instruction are modified. Notwithstanding these limitations, the questionnaire has been used extensively in the study of children's interests. The most accurate results are obtained from intelligent children who feel free to express themselves frankly.

A more authentic picture of children's interests would be obtained from repeated observations in varied situations in which children are free to choose the activities which they prefer. In like manner their esthetic judgment may be studied by noting which poems, pictures, or other works of

art they spontaneously read or look at and enjoy. Discussing their preferences with them individually or in groups reveals their reasons for liking certain poems and pictures and disliking others.

Instruments for Studying Emotional Adjustment.—Predominating use has been made of paper and pencil tests which, at best, measure emotional reactions indirectly through the pupil's answers to symptomatic questions. Mathews,² Johnson,³ and Cady⁴ have prepared for use with school children revisions of the original Woodworth questionnaire of emotional instability.

Rogers⁵ used a more indirect type of question. Instead of asking a child, "Do you sometimes feel inferior?", Rogers attempted to obtain this information indirectly by a question such as, "If you could have three of the wishes below which ones would you choose?" He scored the expressed desire to be bigger, stronger, better-looking as indicating a feeling of inferiority. Whether the child really felt inferior would require a far more intensive study.

Watson⁶ recommended Maller's Character Sketches, which contain statements descriptive of habits, self-control, social adjustment, personal adjustment, symptoms of mental disorder, and readiness to confide, as "probably the best available tool for self-description by pupils of junior high-school level" These and similar attempts to study emotional reactions and adjustment are inadequate. They may be misleading or harmful if used without skill and psychological insight.

² E. Mathews, "A Study of Emotional Stability in Children by Means of a Questionnaire," *Journal of Delinquency*, VIII (January, 1923), 1-40

³ B. Johnson, "Emotional Instability in Children," *Ungraded*, V (January, 1920), 73-79.

⁴ V. S. Cady, "The Estimate of Juvenile Incurability," *Journal of Delinquency Monograph* No 2, 1923.

⁵ C. R. Rogers, *Measuring Personality Adjustment in Children Nine to Thirteen Years of Age*. New York: Teachers College, Columbia University, 1931.

⁶ Goodwin Watson, "Mental Hygiene and Emotional Adjustment," *Review of Educational Research*, V (June, 1935), 245-258.

Intelligence Tests.—Before the advent of intelligence tests, teachers frequently must have confused effort and ability, and made serious errors in diagnosing behavior problems. They frequently failed to understand the aggressive and energetic child, forced beyond his capacities, who turned to truancy or delinquent behavior as a way out. They too often increased the demands made on a child intellectually able to meet the average requirements of the school but having a supersensitivity to environmental strains and tensions which made him over eager to excel. Thus a mental examination supplies indispensable information for the appraisal of school children. It aids the teacher in diagnosing what teachers have commonly called “lazy” or “bad” behavior.

Without doubt, errors are still being made, since few teachers or administrators fully understand the assumptions underlying intelligence tests, accept the implications of the test results, or make the radical modification of school curriculum and instruction that these results involve. But because an instrument has been misused and misinterpreted in the past is not a logical reason for dispensing with its potential usefulness in the future.

In most cases the revised Stanford-Binet scale will give the most reliable results. The next most reliable way of judging the scholastic aptitude of a child in the intermediate or upper grades of elementary school is by means of group intelligence tests. Table VI includes a few tests which have been used for this purpose.

In order better to interpret the results of intelligence tests, some of the conclusions from extensive research on certain aspects will be helpful:

1. Growth in intelligence varies somewhat under differing school environments. In some cases significant and apparently permanent changes in the intelligence quotient accompanied changes in the school environment⁷ Similarly, low socio-economic status deprives certain children

⁷ F. B. Knight, “The Kind of School Environment Needed,” *Personality Adjustment of the Elementary-School Child*, pp 283-284. Fifteenth Year-book, The National Elementary Principal, Vol 15, No 6, July, 1936.

TABLE VI
INTELLIGENCE TESTS FOR GRADES FOUR TO NINE

NAME OF TEST	GRADE	WHERE PUBLISHED	COST
Institute of Educational Research, CAVD Tests	Nursery school through university	Teachers College, Columbia Uni- versity, New York City	Single copy, \$0 15
Haggerty Intelligence Examina- tion, Delta 2	3-9	World Book Company, Yonkers- on-Hudson, New York	25 tests complete with keys and manual, \$1 10
Henmon-Nelson Test of Mental Ability. Three Forms A, B, C	3-8 7-12	Houghton Mifflin Company, 386 Fourth Avenue, New York City	25 tests, \$0 75
Kuhlmann - Anderson Intelligence Tests	4, 5, 6, 7, 8	Educational Test Bureau, 3433 Walnut Street, Philadelphia, Pa	25 tests, complete, \$1 25 Specimen set, \$0 40 \$0 05 per test blank Instruction manual, \$0 30 if order is less than 25 copies
National Intelligence Test, Scale A and Scale B, Forms 1 and 2	3-8	World Book Company, Yonkers- on-Hudson, New York	25 tests complete with manual, \$1 25
Otis Self - Administering Intelli- gence Test, Intermediate Exami- nation, Form A and Form B	4-9	World Book Company, Yonkers- on-Hudson, New York	25 tests complete, \$0 80

of normal intellectual stimulation, a condition which becomes more serious as they grow older, reflecting, eventually, in the decline of the intelligence quotient. Under certain extreme conditions, current tests of intelligence seem inadequate to detect the potential ability of these groups.⁸ To an even greater extent the current tests are not instruments appropriate for measuring differences in intelligence among cultures.⁹

2. The same environment affects different I.Q. levels in different ways. Thus the same explanation may bore one child, meet the needs of another, and be quite over the head of another.
3. A scattering of scores on the Stanford-Binet test does not, as was once believed, accurately identify feeble-minded, delinquent, or neurotic children.¹⁰
4. The percentile method of interpreting test scores has become increasingly popular because of its flexibility, specificity, and the ease with which it is understood by lay persons.
5. As reported in the Harvard growth study of 1,200 children,¹¹ repetition of the Stanford-Binet examination resulted in a median change of seven points in intelligence quotient. Intelligence quotients below 80 were found to be most consistent; those 120 or over, least consistent.
6. The results of any test cannot with accuracy be compared with the standards for that test unless the group tested is reasonably similar to the standardization group in all matters that might affect the relative value of the scores.
7. It is more valuable to know how a given child compares with others in his general socio-economic group than to know how he compares with an undefined heterogeneous group.

⁸ E. J. Asher, "The Inadequacy of Current Intelligence Tests for Testing Kentucky Mountain Children," *Journal of Genetic Psychology*, XLVI (June, 1935), 480-486.

⁹ Florence L. Goodenough, "The Measurement of Mental Functions in Primitive Groups," *American Anthropologist*, XXXVIII (January-March, 1936), 1-11.

¹⁰ Albert J. Harris and David Shakow, "The Clinical Significance of Numerical Measures of Scatter on the Stanford-Binet," *Psychological Bulletin*, XXXIV (March, 1937), 134-150.

¹¹ E. A. Lincoln, "Stanford-Binet I.Q. Changes in the Harvard Growth Study," *Journal of Applied Psychology*, XX (April, 1936), 236-242.

8. Intelligence scales "are based upon the fact of *positive though imperfect correlation* among performances, as regards amount" ¹²
9. A pupil's intelligence cannot be adequately inferred from his scholastic achievements because there are numbers of normal and superior children who fail to make full use of their mental ability. With the methods of measuring intelligence now available there is no excuse for guessing a child's endowment or for trusting to luck when a child's success and happiness are at stake.
10. Only in rare cases should the results of intelligence tests be given to parents. Too frequently parents misinterpret them and reject or nag their children on the basis of erroneous inferences which they draw from them.
11. Provision must be made for individual differences in intelligence and for special abilities. Because the school is geared to an average ability, consideration must be given to pupils above and below average. Otherwise those who are above the average may develop habits of laziness and undue feelings of superiority and those below may lose self-respect and be oppressed by a sense of failure.
12. Test results should always be interpreted in the light of the continuous study of the child in natural situations. The psychometric approach should be reinforced by the clinical.
13. No important decision should be based on the results of a single test.
14. The teacher should take a positive attitude toward test results, seeking to discover potentialities that he may develop.

Achievement Tests — The general dissatisfaction with the usual teacher examination led to the making of more valid and reliable standardized tests of achievement in all school subjects. They have proved to be invaluable for obtaining objective information regarding the achievement of pupils. The best tests are based on sound educational objectives and attempt to measure the individual's ability to use facts in thinking as well as knowledge of specific facts

¹² Leta S. Hollingworth, "The Child of Special Gifts or Special Deficiencies," in Carl Murchison's *A Handbook of Child Psychology* (second edition, revised), p. 842f

A few of the vast number of available tests¹³ are mentioned in Table VII.

Samples of Pupil's Work.—Test papers, written assignments, compositions and drawings in particular, as well as special projects initiated and carried out by the pupil, are of possible diagnostic and therapeutic value. If it is true that "by their works ye shall know them," this important source of information should not be neglected. Spontaneous creative work is less likely to be self-conscious than autobiographies and answers to questionnaires. The style and content of thematic writing, although influenced by the individual's education and the *Zeitgeist*, sometimes reveal the writer's deeper personality trends. Morgan and Murray¹⁴ have developed a technique known as the Thematic Apperception Test which consists of a series of pictures of everyday incidents, featuring characters similar in age and of the same sex as the subject. The subject is shown the pictures and told to make up a story to fit each one. There is a tendency for the subject to identify himself with the person portrayed and to reveal his sentiments and underlying maladjustments.

Social Maturity Scale.—The *Vineland Social Maturity Scale* developed by E. A. Doll¹⁵ is a pioneer attempt to quantify social behavior. It consists of 117 socially significant items of behavior "arranged approximately in the order of their development." Each performance which is habitual for the individual rates a plus score, those which he does not do are rated minus, and those items performed only occasionally are scored \pm . In the total score allowance is made for items which could not be performed under the limitations of his environment.

¹³ See Gertrude Hildreth, *A Bibliography of Mental Tests and Rating Scales*. New York: The Psychological Corporation, 1933.

¹⁴ C. D. Morgan and H. A. Murray, "A Method for Investigating Fantasies: The Thematic Apperception Test," *Archives of Neurology and Psychiatry*, XXXIV (August, 1935), 289-306.

¹⁵ Published by the Training School, Vineland, New Jersey. See also the article by Edgar A. Doll, "Preliminary Standardization of the Vineland Social Maturity Scale," in the *American Journal of Orthopsychiatry*, VI (April, 1936), 283-293.

TABLE VII
ACHIEVEMENT TESTS FOR GRADES FOUR TO NINE¹⁶

NAME OF TEST	GRADE	WHERE PUBLISHED	COST
Buckingham-Stevenson Geography Tests on the U S Four tests	5-8	Public School Publishing Company, Bloomington, Ill.	\$2 00 per 100 copies of each test
Co-operative Achievement Tests in English, Foreign Languages, and Mathematics	8-12	Co-operative Test Service, 437 West 59th Street, New York City	Cost varies for different tests
Co-operative Test of Social Studies Abilities	9-12	Co-operative Test Service, 437 West 59th Street, New York City	5 cents a copy
Co-operative Contemporary Affairs Test: Part I, Public Affairs; Part II, Aesthetic Interests	9-12	Co-operative Test Service, 437 West 59th Street, New York City	6 cents a copy
Detroit Mechanical Aptitudes Examinations for Boys and Girls (Separate tests for each used in junior and senior high school)	7-12	Public School Publishing Company, Bloomington, Ill.	\$3 00 per 100 copies, including manuals, charts for analysis of group to be ordered separately. Test results 1½¢ each
Gates Silent Reading Tests, 4 types, 3 forms	3-8	Bureau of Publications, Teachers College, Columbia University, New York City	\$2 00 per 100 copies Manual, 15 cents

¹⁶ Many of these tests of achievement, as well as tests of intelligence, are distributed by The Bureau of Educational Research and Service, State University of Iowa, Iowa City, and the Psychological Corporation, 522 Fifth Avenue, New York, and other centers. The Educational Records Bureau, 437 West 59th Street, New York City, not only distributes many of these psychological tests, but also maintains a widely used service for administering, scoring, and interpreting the results of tests.

TABLE VII (continued)

NAME OF TEST	GRADE	WHERE PUBLISHED	COST
Hildreth Arithmetic Achievement Tests, Form I	2-6	Bureau of Publications, Teachers College, Columbia University, New York City	100 booklets, \$4 20, specimen set, \$0 20
Iowa Silent Reading Tests, Form B, Elementary	9-12	World Book Company, Yonkers-on-Hudson, New York	25 tests, directions, key, and class record, \$1 40
Iowa Spelling Scales	2-8	Public School Publishing Company, Bloomington, Ill	6 cents each in quantity
MacQuarrie Test for Mechanical Ability	10-adult	Research Service Company, Los Angeles, Calif	25 tests, \$1 50, 7 cents each
Metropolitan Achievement Tests Intermediate battery, 4 forms complete	4-6	World Book Company, Yonkers-on-Hudson, New York	25 tests, direction for administering, class record, and analysis chart, \$2 00 net Partial battery, \$1 50, complete battery, \$2 00
Advanced Battery, 4 forms complete	7-8	World Book Company, Yonkers-on-Hudson, New York	Complete battery, \$2 00, partial battery, \$1 50 Form D, \$2 00
Modern School Achievement Tests, Forms I and II Also short form, skill subjects, 2 forms	2-8	Bureau of Publications, Teachers College, Columbia University, New York City	100 booklets, \$7 55 for complete battery 100 booklets, \$5 25 Manual of directions and answer keys included
Monroe Diagnostic Tests	4-8	Public School Publishing Company, Bloomington, Ill	\$0 85 per 100 copies

TABLE VII (continued)

NAME OF TEST	GRADE	WHERE PUBLISHED	COST
Morrison-McCall Spelling Scale	2-8	World Book Company, Yonkers-on-Hudson, New York	25 cents each
Otis Classification Test (three forms)	4-9	World Book Company, Yonkers-on-Hudson, New York	25 booklets with manual, key, interpretation chart, and class record, \$1 10
Pressey Diagnostic Reading Tests	3-9	Public School Publishing Company, Bloomington, Ill	Vocabulary, \$2 20 per hundred Speed, \$1 80 per hundred
Progressive Achievement Tests Elementary Battery, Forms A, B, and C. Intermediate Battery, Forms A, B, and C	4-6 7-9	Southern California School Book Depository, 1927 No Highland Avenue, Hollywood, Calif	25 tests, \$1 25 net
Reavis-Breslich Diagnostic Test in the Fundamental Operations of Arithmetic and in Problem Solving. Forms A and B	7-12	Chicago University Press, Chicago, Ill.	4 cents each \$4 00 per hundred
Stenquist Mechanical Aptitude Tests 1 and 2 (Pencil and paper test)	6-12	World Book Company, Yonkers-on-Hudson, New York	\$1 30 net per pkg of 25, including key and class record
Stenquist Assembling Test of General Mechanical Ability. Series I, II, and III	3 through high school	C H Stenquist Company, 424 North Homan Avenue, Chicago, Ill.	\$12 50 for each series; scoring blanks, \$0 80 per 100, manual, \$0 40

TABLE VII (continued)

NAME OF TEST	GRADE	WHERE PUBLISHED	COST
New Stanford Achievement Test Advanced examination, 5 forms	4-8	World Book Company, Yonkers- on-Hudson, New York	25 booklets including directions for administering, key, and class record, \$2 00 net
Thorndike McCall Reading Scale, 9 forms	2-12	Bureau of Publications, Teachers College, Columbia University, New York City	\$2 00 per 100 copies
Traxler Reading Test, Forms 1 and 2	7-10	Public School Publishing Com- pany, Bloomington, Ill	7 cents each \$6 00 per hundred

TESTS OF SPECIAL ABILITIES

Lewerenz Tests in Fundamental Abilities of Visual Art	3-12	Research Service Bureau, Los An- geles, Calif	
Meier-Seashore Art Judgment Test	7-12, art students and teachers	Bureau of Educational Research and Service, State University of Iowa, Iowa City, Iowa	Test books, \$0.75 each Record sheets, \$2 00 per hundred
Seashore Measures of Musical Talent	5-8 and adults	C. H. Stoelting Company, 424 North Homan Avenue, Chicago, Ill	Six Columbia records, \$1.25 each
McAdory Art Test	High school or college	Bureau of Publications, Teachers College, Columbia University	Portfolio of 72 plates, \$15 75. Stu- dent record sheets, \$0 40 for 15

*The Case History.*¹⁷ — The case history is an attempt to unify the information obtained from school records; questionnaires, the child's own story; accounts of teachers, relatives, and others who know him; results of tests; interviews, and observation of the child in school, in his home, or on the playground. It is the most widely applicable method available for studying "the whole child."

Developmental records which are kept as the child grows are more authentic than retrospective records. Working back from any given problem, one finds "a bewildering complex of factors" of doubtful accuracy and unidentified importance. It is these errors of memory and judgment that are the chief objections to the retrospective case study.

Recording Information. — Records are a means to an end; they are never an end in themselves. If the information recorded prejudices a person against a child or if it is not used to help him, the time consumed in record-keeping is wasted or worse than wasted.

There is general agreement that information regarding school progress, physical condition, ability as measured by standardized tests, and family data of a non-confidential nature should be obtained systematically and recorded year after year for permanent use. This sort of information may be easily noted on a cumulative record card such as that of the Educational Records Bureau¹⁸ or on the form in use at the Francis Parker School.¹⁹ The latter is part of a cumulative record folder which includes the most recent reports from the teachers who analyze the pupil's marks not only in terms of the grade's average, but also in terms of the pupil's own capacity or expected level of achievement. This kind of information is valuable in detecting strengths and

¹⁷ For complete case studies of certain problem cases see William Healy *et al*, *Reconstructing Behavior in Youth*. New York: Knopf, 1929, Mary Buell Savles, *The Problem Child at Home*. New York: The Commonwealth Fund Division of Publications, 1928, and William I. Thomas and Dorothy S. Thomas, *The Child in America*. New York: Knopf, 1928.

¹⁸ Educational Records Bureau, 437 West 59th Street, New York City.

¹⁹ Dorothy Van Alstyne, "Collecting and Organizing Information about the Child," *Personality Adjustment of the Elementary School Child*, *op cit*, pp. 468-479.

weaknesses in the child's physical and scholastic growth and in adapting the daily program and instruction accordingly.

Would similar records of personality development be equally beneficial to the child? Many educators believe they would be and seek through observation, interview, and questionnaire to obtain a permanent record of development in personality comparable to the records of growth in height and weight and school achievement²⁰ By means of these records, skilled persons are able to detect evidences of personality strengths and weaknesses and to adapt the daily program and environment to accord with them.

The chief objections raised to permanent records of this type are their subjectivity, their superficiality, the transient quality of preadolescent behavior, and the possibility of their misuse and misinterpretation. It is true that the teacher may be a poor judge of the child's character and that such a record frequently is as much of an indication of teacher attitude as of child personality. It is true that the observed behavior is only a small sampling of the child's total behavior and may give slight inkling of his real intent. It is true, also, that personality is undergoing continuous modification during these years and hence that the previous year does not give an accurate picture of the child's present status. So far as possible, however, only persistent behavior tendencies, not chance occurrences, should be put on the permanent cumulative record. It is also claimed that "the only essential information is that which can be put into use at once for the child's benefit,"²¹ and that such information frequently is embodied in the facts obtained at the moment. The selection of the most significant information about a child is a difficult matter. No doubt there are in schools and in social agencies large collections of futile and trivial data.

Nevertheless, for accurate appraisal of a boy or girl and for that periodic checkup to ascertain whether the varied

²⁰ Ruth Strang, *Every Teacher's Records* New York. Teachers College, Columbia University, 1936.

²¹ Edith M. Everett, "Information Needed in a Case Study," *Personality Adjustment of the Elementary School Child*, p. 485. Fifteenth Yearbook, The National Elementary Principal, Vol. 15, No. 6, July, 1936.

needs of each pupil are being met, a cumulative record of his behavior is essential. And teachers with the guidance point of view are not likely to misuse or fail to use such records. They should learn not to read into a child's life those characteristics which the records merely suggest.

The reports sent to parents are one of the most important factors in the guidance of school children insofar as they help the parent to co-operate with the school in promoting the child's best development, and insofar as they direct the teacher's attention toward a more adequate appraisal and adjustment of every child.

The reports in use at the present time represent a great variety of types which may be arranged on a scale as follows:

1. General rating on effort, proficiency, and deportment.
2. General rating with an additional comment to parent.
3. Specific rating in separate subjects.
4. Specific rating in separate subjects and in certain personality traits.
5. Specific ratings both in terms of the individual's capacity and in terms of group standards.
6. Descriptive letter to parent giving an evaluation of the child's specific strengths and weaknesses, and recommendations.
7. Interview with parent about the child's development.

The large majority of schools now include a rating of conduct in addition to subject marks, and an increasingly large number of schools are using the letter and the interview form of report to parents. The report to parents calling for specific evaluation of the personality as well as the achievement of individual children quickly reveal lacks and deficiencies in the teacher's knowledge of his pupils. It is impossible for a teacher who has not directed his attention toward children as individuals to make reports of the types listed in 4, 5, 6, and 7.

The purely qualitative descriptive record presents three difficulties which should be overcome: It tends to become stereotyped; the teacher's statements sometimes are misinterpreted by parents; and teachers uphold markedly different

standards which may cause difficulty. For instance, one teacher may rate a child low after he has been rated high by his previous teacher. In spite of these difficulties the descriptive report which attempts to evaluate the child as a whole is a sufficiently important instrument of guidance to deserve intensive study. It seems advisable for teachers to discuss a child's progress with the parents directly in order to prevent misunderstanding. The report card may then be given to the parent as a written record of the statements made.

What Do the Facts Mean? — The interpretation of the information obtained is the most difficult part of the process of appraisal. A few examples of the kind of information that is useful in interpreting personal data are given in the following paragraphs.

Significance of Physical Development and Motor Abilities. — Extreme deviations from physical norms tend to create problems. It has already been suggested that the very tall girl, the very short boy, or the fat child may have special problems of adjustment. Children likewise differ in their available energy and this factor alone may make a certain environment fatiguing for one child and too unstimulating for another.

The height-weight-age ratio of a particular child should be considered with reference to a number of factors that condition growth. Among these are race, family, geographic area, season and year, socio-economic status, diet and disease, and health education.²² Mexican children were found to be below American standards of height and weight. American-born Japanese excelled Japan-born Japanese by 7 per cent in stature and thoracic circumference and by 20 per cent in weight.²³ Brothers and sisters are more alike in height and weight than would be expected from mere chance. Geographic area is tied up with other factors such as diet, disease, and socio-economic status. No clear-cut dif-

²² Howard V. Meredith and George D. Stoddard, "Physical Growth from Birth to Maturity," *Review of Educational Research*, VI (February, 1936), 54-84.

²³ P. M. Suski, "The Body Build of American-Born Japanese Children," *Biometrika*, XXV (December, 1933), 323-352.

ferences in height have been associated unequivocally with a particular region. There is a tendency for birth-weight means to follow the curve of sunshine and for school children to make their greatest gains in weight after the summer months and their minimum gains directly following the winter months. Some years seem to be better growing years than others, due probably to both climatic and economic conditions. School children from the more privileged groups were found to be "taller and to have greater hip width, larger arm girth, and greater amounts of subcutaneous tissue over the biceps than poorer groups" ²⁴ No definite downward trend during the depression years in weight of school children in this country was reported by several investigators.²⁵ The influence of nutrition and certain diseases on growth, on the other hand, is well-established. Because of the difficulty in controlling all the factors influencing health and growth in a school situation, it is difficult to obtain proof of the effect of health instruction. One carefully planned experiment ²⁶ indicated a small but consistent superiority in height, weight, breadth of shoulders, grip and vital capacity in favor of the instructed group.

The significance of motor abilities in the life of a child can as yet only be surmised. Even slight motor retardation may affect the social development of children, and, indirectly, their whole personality. On the other hand, the acquisition of certain motor skills, especially skill in the games and sports popular with the child's social group, may be largely responsible for changing a shy, withdrawing child into one who is eager to take the lead in a situation.

Significance of a Broken Home — Children referred to clinics and courts usually show a much larger percentage of broken homes in their case histories than are found in the general school population. In certain cases, the propor-

²⁴ Howard V. Meredith and George D. Stoddard, "Physical Growth from Birth to Maturity," *op cit*, p. 74

²⁵ Carroll E. Palmer, "Height and Weight of Children of the Depression Poor," *U S Public Health Reports*, L (August 16, 1935), 1106-1113

²⁶ Martha C. Hardy and Carolyn Hoefler, *Healthy Growth*. Chicago. University of Chicago Press, 1936

tion is as high as 30 per cent. Evidently a broken home may contribute to delinquency. Whether it does or not depends upon the specific inter-personal relationships existing within it, and its relationship to other factors in the total situation.

There are many kinds of broken homes, however, some of which wreck children much more than others. Many children from broken homes present no particular behavior disorders. The broken home is usually only one of a number of associated factors that creates personality difficulty in children.²⁷ Whether the child is seriously affected by the disintegration in his family depends upon his own make-up, and on the antecedents and consequences of the final disintegration which may have been brewing for years.

On occasions the breaking up of the home is used as a means of adjustment. The delinquent career of one fourteen-year-old boy might have been deflected had he been removed four years earlier from his alcoholic mother and negligent father. In other cases, cruelty, poor methods of discipline, and immorality in a home is a more devastating influence than the factor of a broken home *per se*.

Significance of Parental Attitude. — Parental attitudes are reflected in the school behavior of children. The two extremes of parental attitude that appear to wreck children most are oversolicitude, on one hand, and neglect on the other. A study of the records of 500 children in the kindergarten and first six grades of Winnetka schools²⁸ indicated that the children who were "babied" or "pushed" by their parents had poorer work habits and more social difficulties than children from homes where wholesome parent-child relationships prevailed.

Differences in social adjustments of children living on the same street may be traced to parental attitudes. In one

²⁷ Leo Kanner, *Child Psychiatry*, p. 91. Baltimore, Maryland: C. C. Thomas, 1935.

²⁸ B. W. Hattwick and M. Stowell, "The Relation of Parental Over-Attentiveness to Children's Work Habits and Social Adjustments in Kindergarten and the First Six Grades of School," *Journal of Educational Research*, XXX (November, 1936), 169-176.

investigation²⁹ it was found that the shy, retiring, socially inadequate children were likely to have mothers who dominated the household, emotionally, economically, or because of their irrepressible efficiency. On the other hand, children who came from homes of tension or laxness, where they were unsupervised and neglected, frequently escaped to the street and became leaders in mischiefmaking.

The Significance of Daydreaming. — Daydreaming usually is frowned upon, when, actually, no one knows how much daydreaming is normal. The kind of daydreams that are not worth telling, perhaps in most cases, should be avoided. They tend to carry the child away from reality and to make him less willing to face actual difficulties. Excessive daydreaming of this type tends to occur in the case of children who are unsuccessful in work or play. On the other hand, a great deal of tension may be relieved more harmlessly through daydreaming than in any other way.

Daydreaming is a symptom. If the symptom must be altered, the environmental setup must be changed so that the stimulation is different. It is no use merely to drive the symptom out of sight. A child may daydream his way through school in which he feels himself to be a social misfit, and change only when a change in the social environment sweeps him into the midst of social activities which leave no time for imaginative musings. Unwarranted interference with a child's privacy may do more harm than the daydreaming it is intended to reduce.

THE PROCESS OF ADJUSTMENT

Diagnosis is ahead of adjustment. The problem of studying the child and even of discovering why he behaves as he does is not so baffling as the problem of doing what ought to be done about it. Avenues of adjustment which are clearly indicated frequently are closed to the individual case. A number of boys and girls in the preadolescent years obvi-

²⁹ Virginia Boggess, "Some Factors Accounting for the Variation in the Social Adjustment of Children Living in a Tenement Area," *Smith College Studies in Social Work*, VI (June, 1936), 324-359.

ously need a carefully controlled environment and expert guidance. They need regular meals, and an education that is individually supervised. Such a boy was Paul who began his delinquent career at ten years of age and by fourteen was firmly established in it. At ten, it was evident that he should be removed from his unfavorable home and neighborhood environment. This was not done. Thus his subsequent career might more justly be characterized, as the case of a delinquent society than as the case of a delinquent boy.

Adjustment through Everyday Situations.—Everyday concrete situations supply the best means of gaining emotional insight into habits of adjustment to personal and social relationships. The method and attitude of the teacher, the program of school activities, the influence of fellow pupils are all parts of the school environment to which the child is continually responding.

Education has unfortunately had as its main objective the compressing into a common mold of all the varied possibilities which the individual child represents rather than an effort to discover in each one his outstanding capacities and to enable him to unfold all of those marvelous qualities with which he has been endowed and develop his capacity for living to the fullest possible extent . . . Happy mean whereby the individual might be considered from the point of view of a social unit. As such, society becomes of absolute importance to him, as only through it can he find his greatest individual development, and, *per contra*, only through the greatest individual development of each unit can society reach its greatest possibilities. Education of the individual and development of social standards are mutually related in this way and must be considered, not apart, but together.³⁰

The teacher endeavors to discover why a child, for example, constantly asserts his personality at the expense of his companions. He works with the child in order to help him live harmoniously with his fellows.³¹

There must, however, be provision for progression of

³⁰ William A. White, *Twentieth Century Psychiatry*, p. 121. New York: W. W. Norton and Company, 1936.

³¹ Hazel Welch, "Meeting Reality, Group Experiments in the Walden School," *69 Bank Street* (Bureau of Educational Experiments, 69 Bank Street, New York), III (February, 1937), 6-8.

experience as well as provision for creative work and individual interests. One of the most ardent advocates of progressive education recognizes, in his comprehensive thinking, this need:

Development . . . is a continuous process and continuity signifies consecutiveness of action. Here was the strong point of the traditional education at its best. The subject matter of the classics and mathematics involved of necessity, for those who mastered it, a consecutive and orderly development along definite lines. Here lies, perhaps, the greatest problem of the newer efforts in education. It is comparatively easy to improvise, to try a little of this today and this week and then something else tomorrow and next week. Things done on the basis of some immediate interest and stimulation but without sufficient regard to what it leads to, as to whether or not something more difficult, setting new demands for information, need for acquisition of greater adequacy in technique and for new modes of skill is led up to and grows naturally out of what is started.²²

Effective guidance leads to differentiation in activities. After the pupils' widely different interests and backgrounds are discovered, the group may be organized so that some children are working in large groups, some in small groups. Others may work individually on enterprises of their own choosing in which they need experience and which frequently take them out of the school into the community.

In one-room rural schools a young, inexperienced teacher frequently is expected to hold thirty "classes" a day. If, however, the rural teacher is shown how to develop methods of individual and group instruction, he may guide children more effectively than teachers in large urban classes. A small number of pupils does not guarantee good guidance. Unless the teacher has the guidance point of view, he may fail to individualize instruction even in a class of five pupils. In a few rural areas peripatetic teachers have been employed to advise inexperienced teachers on work with individuals and groups.

Teachers guide children toward reading material which is related to the group activities, but they also make sugges-

²² John Dewey, "The Need for a Philosophy of Education," *The New Era*, XV (November, 1934), 211-214.

tions and supply books along the lines of individual interests. The library contains reference materials and stories of all sorts. The librarian gives tactful advice to individual children in the selection of material that is commensurate with their ability to read as well as in line with their particular interests.

Guidance through Health Examinations. — Simple health inspections and health examinations offer opportunities for guidance as well as for disease prevention. They create standards which demand a periodic checkup and help to establish a better concept of good health. They serve as a vehicle for imparting knowledge as to "how to use the existing corrective and prophylactic medical forces afforded by that community." ³³

Guidance through Sharing Responsibility. — A sharing of home responsibilities and its consequent closer contacts with parents helps to build self-reliance and a sense of economic reality in children of this age. The following principle, as stated by Dorothy Canfield Fisher, is important:

Material possessions and material ease, especially idleness, do not make grown-ups happy any more than lots of toys and nothing to do make children happy; that which makes people happy is creative activity that suits their particular temperament that it is just as foolish to let material possessions and ease stand in the way of securing creative activity you like. With that certainty about what makes people happy and wise, wouldn't they swim all right, no matter what economic seas are before them? ³⁴

A sharing of responsibilities is a co-operative affair; it is not an arbitrary assignment of duties. Home duties tear down desirable parent-child relationships when they are insisted upon in the following manner:

Mother: "Stop your playing, Teddy, and come right into the house."

Teddy: "But, mother, I'm in the middle of a game."

³³ D. W. Gudakunst, "Diagnosis in Health Education," *Yearbook of the National Society for the Study of Education*, XXXIV, 1935, 347-361.

³⁴ Dorothy Canfield Fisher, "At Home in Any World," *Child Study*, IX (February, 1932), 156.

Mother: "I can't help that. You must go to the store at once."

Teddy: "But the boys can't finish the game without me."

Mother: "They must wait until you come back. And no temper, either."

Teddy loses his temper, throws his ball down the street, kicks the dog, rushes into the house, and bangs the door yelling, "You spoiled the game. I won't go to the store, I won't."

This utter lack of planning and insight into the child's world is the opposite of co-operative sharing of responsibility. The latter may be illustrated by an incident of another kind: A twelve-year-old boy was becoming rebellious because of the amount of his allowance. The mother was giving him more than she felt she could afford in order to keep him contented at home. She and the father decided to talk over the details of the family budget with him. Accordingly, they held a family council one evening and discussed his father's income, the expenditures for rent and insurance, for food, savings, church, and for the other child. At the end of the discussion, the boy turned to his father and said, "Gee Dad, you've done a good job! I don't see how you've managed to give us all so much."

Children should feel themselves contributing members of the family, whether they participate in the work of the household as a part of the family group, or whether they earn their own allowances by doing work for pay.

Adjustment through a Change in Environment.—A change in environment frequently is an important factor in adjustment. It cannot, however, be expected to work magic. The child must be prepared for the change; the foster parents must be carefully selected; and a continuity of counsel must be maintained.

One reason for occasional failure in clinic treatment lies in the fact that the children studied return to non-harmonious homes. The chances for improvement in behavior are definitely greater among children whose homes are harmonious.

AGENCIES OF GUIDANCE

No one can accomplish the task of guidance single-handed. Many individuals and agencies must co-operate in the process. Among these are the superintendent and principal of the school, the teachers, specialists in guidance, parents, special schools and classes, summer camps, clinics, and other community agencies and organizations.

The Superintendent and Principal. — Mort³⁵ emphasized the prevention of maladjustment by the following administrative means: extending the scope of educational opportunities, providing for the diagnosis of children's needs, developing wise promotion policies, improving home-school relationships, developing an adequate system of records and reports, selecting superior teachers, and extending staff responsibility.

This is an excellent analysis of the role of the administrator in the guidance of children. Obviously, he plays an important part in creating conditions which are favorable to child growth. He must work through his teachers and work for them in creating conditions favorable to their most effective functioning. The principal and superintendent also must work with and through the parents in accomplishing the task they both recognize as all-important, namely, the best development of the children. The administrator must interpret the modern school to parents lest they be disturbed by the lack of competitive and uniform grade standards to which they have been accustomed, or by the freedom with which children are allowed to set tasks for themselves and to seek the co-operation of their fellow pupils in carrying them out. Furthermore, it is the administrator's responsibility to provide a school building which is healthful and psychologically conducive to child development. Finally, he must utilize community resources and do his full share in making it a better place for growing children.

³⁵ Paul R. Mort, "Administrative and Supervisory Policies Facilitating Pupil Adjustment," *op cit*, pp. 330-339.

The Teacher's Role in Guidance. — "Teachers hold a key position in the environment of the growing child."³⁶ Even though teachers are not as well qualified technically as specialists, the major work of child guidance must be done by them. Prolonged work with individual children, even by expert specialists, will accomplish less than the intelligent and sympathetic work done by large numbers of less highly trained teachers. Jessie Taft wrote, "If only one factor in a child's maladjustment at school can be changed, the attitude of the teacher will usually be found to be the most important and its alteration most immediately effective in bringing about improvement."³⁷

Viewed in the light of the whole positive school program, the guidance of children is the main task of the teacher. No one else, theoretically, is in such a strategic position to assume this responsibility.

In actual practice, however, the teacher is so poorly prepared to guide children, so burdened with large classes, so handicapped financially, that his contribution to the study and guidance of his pupils is limited. These conditions must be changed. Yet with exceptional leadership, even under present conditions, teachers have done extraordinarily good work. The rural teachers in Breathitt County, Kentucky,³⁸ for the most part young, inexperienced, handicapped by lack of equipment, in two years gained skill in studying children and in making provisions for their individual needs.

In other situations, however, observation of teachers at work has shown that they fall far short of their opportunities for guidance.³⁹ They apply direct measures, such as reward

³⁶ Arnold Gesell, "The Teacher-Child Relationship," *Understanding the Child*, I (January, 1931), 7.

³⁷ Jessie Taft, *The Relation of the School to the Mental Health of the Average Child*, p. 5. Reprint No. 181. 50 West 50th Street, New York: National Committee for Mental Hygiene, 1932.

³⁸ Wilbur I. Gooch and Franklin J. Keller, "Breathitt County in the Southern Appalachians," *Occupations*, XIV (June, 1936), 1011-1110.

³⁹ N. B. Campbell, *The Elementary School Teacher's Treatment of Classroom Behavior Problems*. New York: Teachers College, Columbia University, 1935.

and punishment, to the symptoms of maladjustment, instead of seeking for the specific causes. Though they are familiar with the advantages claimed for praise, they use punishment far more often than reward.

Everett suggested three essential technics for use by the classroom teacher: "(1) direct observation of behavior, (2) a trained sensitivity to what this behavior means, and (3) . . . a sufficiently adjusted personality on the part of the adult to enable him to give the child the feeling that he is understood and accepted as a person, although his behavior is not acceptable." This skill "can be developed only through living and feeling with many children and through studying constantly what lies back of their behavior."⁴⁰

A child reacts to the teacher's attitude toward him. If the teacher is friendly, he is likely to evoke a friendly response. If a beloved teacher expects a certain degree of success and a certain kind of behavior which is within the child's power, the child will try to fulfil that expectation.

When teachers or parents assume that a normal child is stupid, the child, if sensitive, is likely to accept their evaluation and to remain shyly and unaggressively in the background at home and at school. A method suggested for changing such a child's idea of himself consists of assuming that the child is normal, providing tasks which the child can accomplish with ease, praising each deserved success, and gradually increasing the complexity and difficulty of the tasks.⁴¹ Indulgence toward undue submission and feelings of inferiority is likely to re-enforce these tendencies. An aggressive attitude toward aggression usually aggravates the problem. It is possible to effect a good deal of subtle guidance through the teacher's attitude.

Much has been written about the kind of personality a teacher should have in order to be effective in guiding children. He should have health, emotional maturity, and be

⁴⁰ Edith M. Everett, "Information Needed in a Case Study," *Personality Adjustment of the Elementary-School Child*, pp 485-493. The National Elementary Principal, Fifteenth Yearbook, Vol 15, No. 6, July, 1936

⁴¹ Ida Lowy, "Stupidity as Exemption," *International Journal of Individual Psychology*, I (April, 1935), 102

free of conflicts which would interfere with his being constructively sensitive to his pupils' emotional needs. He should also have a sound philosophy of life by which he lives, and the ability himself to live purposefully and wholeheartedly in the present. Pupils themselves say that they like teachers who are sympathetic and understanding, can see two sides of a question, have time to talk with them, and give constructive help on their problems.

In-service Education of Teachers for Guidance.—Programs of teacher guidance are indispensable even under far more adequate systems of teacher education than exist at present. These programs vary with the organization of the school, the personality and preparation of teachers and administrators, and other factors.

Certain features of an in-service program of education which are generally effective have been admirably described by Koch:

Just as younger pupils do, so the teacher will doubtless learn best under inspired, enthusiastic, and optimistic leadership—leadership which permits her to participate and believes her capable of growth, which places responsibility on her in accordance with her ability; which recognizes her as an individual with specific interests, needs, talents, and life experiences, and which sets for her such tasks as will permit her to reap a satisfying return ⁴²

It must be recognized that individual differences prevail among teachers as well as among pupils. There are laws of learning for teachers as well as for pupils which should be applied in any program of in-service education.

Koch discussed the following main avenues of education for teachers-in-service:

1. Lectures, especially those which include discussion or personal conference with the instructor.
2. Reading materials, made available through school funds or a private book club, and popularized by effective publicity.

⁴²Helen L. Koch, "The Inservice Training of Teachers for Personality Guidance," *Personality Adjustment of the Elementary-School Child*, p. 429, Fifteenth Yearbook, The National Elementary Principal, Vol 15, No 6, July, 1936

3. Study and conference groups, dealing with vital school problems of guidance and case reports of individual pupils.
4. Case conferences, in which teachers have the opportunity to work with specialists on individual cases.
5. Demonstration teaching, which should be followed by a critical, microscopic examination of what has been said and done.
6. Participation in the preparation of records and record forms. This activity may serve as a starting point for widespread guidance activities, for records cannot be successful unless the recorder has an intimate knowledge of the pupil.
7. Surveys, which inventory school practices from time to time.
8. Courses in mental hygiene, child development, child psychology, educational and vocational counseling, case work, and related areas, summer "internships" in child guidance clinics, and other educational opportunities offered by higher institutions or school systems

Institutions for the Education of Teachers. — The teachers' colleges and normal schools are a strategic point in the total guidance program. If teachers are eventually to carry the main responsibility for the school guidance of children, they must be educated to do so. In the future administrators have a right to expect that from the institutions for the education of teachers will emerge carefully selected individuals. They will have the personnel point of view and their methods of working with individuals and groups will be psychologically sound.

Specialists in Child Guidance. — In certain cases the specialized technics of the psychiatrist or psychoanalyst are useful in giving insight into the deeper origins of maladjusted attitudes. Specialists in guidance are increasingly combining observation of children in natural situations and work with retarded children with analytical procedures that encourage children to take an active part in the interpretation and solution of their problems.

Perhaps the most important function of the guidance specialist in a school system is his part in the in-service educa-

tion of teachers. Teachers, untrained in technics of guidance, do not magically acquire the ability to work effectively with individuals and groups. They, too, need guidance. The expert upon whom this responsibility rests should see that the necessary technical information for an accurate appraisal of the children is made available to teachers. In addition, he should discuss with teachers the adjustments requisite for each child in their classes.

Psychiatric and psychological clinics are also maintained by various universities, hospitals, and philanthropic organizations for the purpose of meeting the challenge of the exceptional child. Juvenile courts perform a similar function for the delinquent group. The better the other agencies do their work, the less the juvenile court will have to do.

Summary.—Appraisal, instruction, and adjustment are inseparable parts of the educative process. In the elementary school there is no justification for a guidance program apart from the curriculum and instruction. The properly qualified teacher responsible for thirty to forty pupils should study the capacities interests, and needs of each pupil, obtaining as much expert assistance as he needs.

Interwoven with this appraisal is the instruction and adjustments which the study of the pupils has shown to be needed. In this aspect of child development the teacher (who might be called a teacher-counselor) may obtain the assistance of all the resources of the school and community which will meet special needs of his pupils.

Under the present conditions where most teachers lack preparation for their guidance function, expert leadership is essential. There must be someone in the school or school system who will give teachers a vision of their task and who will supply them with sources of information. This individual, by working with teachers on special problems, will give them informal demonstrations of methods affected as psychologically sound in dealing with individuals and groups. This co-ordinator of the education of the pupils may be the principal, who has had special education in guidance or an

expert in guidance to whom the principal has delegated a part of his functions

Thus administrators, teachers, and experts in guidance will be working co-operatively in the unified task of education, with the conviction that it is the legitimate task of the teacher to "spend half his time in studying his pupils as individuals, and the other half, doing what that study shows to be desirable and necessary."

CHILD DEVELOPMENT AND EDUCATION

In the preceding chapters emphasis has been put upon providing conditions favorable to child development. The point of view represented has been most clearly and reasonably expressed in the revised edition of the *"Handbook of Suggestions* for the use of teachers and others concerned in the work of Public Elementary Schools" published by the Board of Education of Great Britain.⁴⁸ In this admirable handbook the function of the schools is stated as follows: "(1) to provide the environment which is best suited to individual and social development; (2) to stimulate and guide healthy growth in this environment; (3) to enable the children to acquire the habits, skills, knowledge, interests and attitudes of mind which they will need for living a full and useful life; and (4) to set standards of behavior, effort and attainment, by which they can measure their own conduct." In this statement the two extremes of catering exclusively to children's interests and making them learn what is good for them are avoided. In such an educational program there is a place for drill, for real knowledge which "involves the power to see relations of increasing complexity and generality," for "interests that issue from spontaneous self-direction," and for "attitudes of mind that bespeak a growing sense of values." Overemphasis on any one of these attributes is to be avoided. It is only by a nice balance among habits, skills, knowledge, interests, and attitudes that the best development of children is achieved.

⁴⁸ His Majesty's Stationery Office, 1937.

QUESTIONS AND PROBLEMS

1. Read some good examples of detailed case studies, noting the kind of information obtained, its bearing upon the child's development, its interpretation, the soundness of the therapy suggested
2. List the information in studying individual children which you have found most useful.
3. How can you test the effects of your plan of work with a particular case?
4. Name some advantages of making a case study of certain children in a class.
5. A classroom teacher frequently needs experts to help her. What relationships of mutual benefit should the classroom teacher have with
 - a. The school psychologist?
 - b. The nurse?
 - c. The visiting teacher?
 - d. A director of guidance?
 - e. The vocational guidance counselor?
 - f. Other members of the school staff or outside agencies?
6. Describe in detail an ideal situation for the development and guidance of children nine to twelve years of age. Show how an actual situation with which you are familiar might be modified to approach the ideal.

EXAMINATION

Period from Primary to Adolescent

1. Complete the following sentences:
 - a. Quickness of learning depends much on the extent to which the material has _____ for the pupil.
 - b. A pupil learns more efficiently if he knows the extent to which he is _____.
 - c. An effective incentive to learning is _____
 - d. Over a period of time the practice, in general, should be _____ at first, then occur gradually at _____ intervals.
 - e. A pupil should have a _____ in mind in studying.
2. Check the characteristics which are common to children of nine to twelve years of age in many communities
 - a. Boys form gangs, clubs, or teams.
 - b. Boys and girls seek each other's company.
 - c. Individual competition is strong.

- d Organized co-operative team play is carried on without supervision
 - e. Children consider speed in play more important than grace.
 - f. Guessing games and games of chance are popular.
 - g. Love stories are preferred to stories of action, adventure, and mystery.
 - h. Collection of bird's eggs, nests, and many other objects is popular.
 - i. Specific principles of conduct are understood better than general moral laws
 - j. Ball games are of greater interest than toys or games of chase
 - k Children are usually willing to practice in order to acquire skill.
 - l Parent and teacher are held in great respect and their opinions are undisputed
3. Give one way of preventing or dealing with the following causes of lies of school children.
- a Confusion of fact with fancy.
 - b. To get out of awkward social situations.
 - c. To avoid something unpleasant.
 - d To harm or spite another person.
 - e To deceive the teacher
 - f A negative attitude toward another person.
 - g To save another child from punishment.
 - h. To get something desired.
4. Which of the following procedures would you use to discourage fighting among upper-grade boys?
- a. Planning definite play activities so that each boy knows the part he is to play.
 - b. Introduce boxing, wrestling, tug of war, debating, and various contests
 - c. Establish ideals of fighting for the protection of the weak, for a just cause, for the overcoming of a bad habit.
 - d. Step in as peacemaker and stop the fighting promptly each time.
 - e. Talk to the children about acquiring the virtues of meekness and humility.
 - f. Organize scouts and recreational groups

- g. Settle every difference among the pupils promptly before the fight gains headway.
 - h. Teach the boys that fighting is wicked.
 - i. Provide opportunities for some strenuous athletic rivalries.
 - j. Offer to referee each fight that occurs.
5. Fill in the names of the tests you would use in the following situations:

AGE OR GRADE	PURPOSE FOR WHICH TEST IS DESIRED	NAME OF TEST
Three months to three years	To measure intelligence	
Grades one to three	To measure intelligence of the class at one time (Group Intelligence Test)	
Four years to fourteen years	To measure intelligence of individuals one by one (an individual intelligence test)	
Grades one to six	To measure oral reading ability	
Kindergarten	To measure intelligence of the class as a group	
Grades one and two	To measure word recognition	
Grades four to eight	To measure achievement in arithmetic, reading, spelling, science, history, and literature	
Grades four to twelve	To measure general intelligence (a group test)	

6. Put a cross (X) in front of the one best answer in each exercise.
- a. If you could develop only one of the following characteristics of a child, which would you choose?
 - unfailing, prompt obedience to adults.
 - meeting difficulties squarely.
 - acknowledging defeat readily.
 - docility.
 - b. At this period moral training which consists of the study

of moral codes usually does not produce the desired results because

— a code of virtues is too definite and detailed.

— children under twelve years of age do not comprehend abstract laws and principles.

— memorizing rules is too difficult for young children.

— moral codes are too idealistic.

c. One characteristic of children who study efficiently is that

— they never take their eyes off their books.

— they read the assigned material over and over until they know it "by heart."

— they stop work promptly at the end of a period

— they take part in class discussions and ask questions.

SELECTED BIBLIOGRAPHY

ALEXANDER, F. MATTHIAS. *The Use of the Self* Its Conscious Direction in Relation to Diagnosis, Functioning and the Control of Reaction. New York: E. P. Dutton and Company, Inc., 1932 Pp xix + 143.

The description of an interesting technic for enabling individuals to secure the right use of themselves In one chapter the application of the technic to a case of stuttering is described

BAILEY, EDNA W., LATON, ANITA D., and BISHOP, ELIZABETH L. *Outline for Study of Children in Schools* New York McGraw-Hill Company, 1933. Pp. vii + 248

A workbook in child study included the following topics. Principles of child study, study of the child in preschool, study of the child in elementary school, study of the child in secondary school

BENEDICT, AGNES E. *Children at the Crossroads* New York The Commonwealth Fund, 1930 Pp 238

Stories of nine children struggling with problems that brought them to the attention of visiting teachers

BREED, FREDERICK S. "Spelling," *Review of Educational Research*, V (February, 1935), 83-88.

A summary of investigations relating to spelling, bringing together the scientific facts about the selection and gradation of vocabulary, methods of instruction, factors in learning, procedures and devices, the generalization of ability, deficiencies and diagnosis, and the measure of achievement.

BURNHAM, WILLIAM H. *The Normal Mind*. New York D. Appleton and Company, 1927. Pp. xviii + 702.

A discussion of the fundamental principles of mental hygiene and the hygiene of school instruction for normal children.

BURT, CYRIL *The Subnormal Mind* New York Oxford University Press, 1935 Pp 368

A simply and interestingly written book on the elements of clinical psychology as it is practiced today, covering the interpretation of testing, the problems of the mental defective and the dull and backward child, delinquency, and neuroses as seen in children.

CASWELL, HOLLIS L., and CAMPBELL, DOAK S *Curriculum Development* New York American Book Company, 1935. Pp xvii + 600

A discussion of the curriculum with special emphasis on the psychological and social aspects of the problem, and concrete, constructive suggestions.

CHAVE, ERNEST J *Personality Development in Children* Chicago University of Chicago Press, 1937 Pp xiii + 354

A discussion of the problems of personality development and how the processes of growth are influenced by home, church, school, neighborhood, and play activities

CHILD STUDY ASSOCIATION. *Sex Education, Facts and Attitudes* 221 West 57th Street, New York Child Study Association of America, 1934 Pp 59

A concise, straightforward, sound discussion of sex education

COLE, LUELLA *Psychology of the Elementary School Subjects* New York: Farrar and Rinehart, 1934. Pp xvi + 330

A concrete, detailed treatment of each of the major elementary school subjects

EISENBERG, A. L *Children and Radio Programs* New York Columbia University Press, 1936 Pp xvi + 240

Answers to many questions relating to radio programs for children based upon a survey of over three thousand children in the New York area

GREENE, H. A., and JORGENSEN, A. N *The Use and Interpretation of Elementary School Tests.* New York. Longmans, Green and Company, 1935 Pp xxviii + 530

A discussion of the problems of measurement of instruction in the elementary school grades

HART, JOSEPH K. *Creative Moments in Education* New York Henry Holt Company, 1931 Pp xvi + 476

A documentary interpretation of the history of education

INGRAM, C P *Education of the Slow-Learning Child* Yonkers-on-Hudson World Book Company, 1935. Pp. xii + 419

An emphasis on the educational integration of all groups in the school population in its specific suggestions for teachers regarding the slow-learning child

- JONES, VERNON *Character and Citizenship Training in the Public School an Experimental Study of Three Specific Methods* Chicago University of Chicago Press, 1936 Pp 404

A report of a careful experiment in character education in the seventh and eighth grades in which combination of experiencing and discussion was found to be most effective.

- KAWIN, ETHEL. *The Wise Choice of Toys*, with an introduction by Frank N. Freeman. Chicago University of Chicago Press, 1934 Pp xi + 111

A valuable non-technical discussion of play, play interests, individual differences in play, and play as education

- LEHMAN, HARVEY C and WITTY, PAUL A. *The Psychology of Play Activities* New York: A. S. Barnes and Company, 1927 Pp xviii + 242

A comprehensive report, based on a check list of 200 activities, of the play life of children from five to twenty-two years of age, including the games and other play activities commonly engaged in, those liked best, those occupying the largest amount of time, and the relation of play to such factors as age, sex, race, season, intelligence, and community

- LOUTTIT, C M *Clinical Psychology: A Handbook of Children's Behavior Problems* New York Harper and Brothers, 1936 Pp xx + 695

A systematic, concrete presentation of the materials of clinical psychology as applied to the diagnosis, descriptions, and treatment of behavior problems of children

- McKEE, PAUL. *Reading and Literature in the Elementary School* Boston: Houghton Mifflin Company, 1930. Pp xi + 591

A description of reading skills needed in the elementary grades and specific suggestions for methods of teaching these skills

- MITCHELL, ELMER D, and MASON, BERNARD S. *The Theory of Play*. New York A. S. Barnes and Company, 1934. Pp. vii + 547

A comprehensive background for understanding the importance and function of play and specific suggestions for the administration of recreation.

- MITCHELL, ELMER D, and MASON, BERNARD S. *Active Games and Contests* New York A. S. Barnes and Company, 1935 Pp viii + 600

An exhaustive list of vigorous play activities, with an adequate description of each and suggestions as to a suitable place for the activity and the age or grade for which it is appropriate

- MORGAN, JOHN J. B. *The Psychology of the Unadjusted School Child* (revised edition). New York. The Macmillan Company, 1936. Pp vii + 339.

A revision of a useful application of the principles of mental hygiene to practical classroom situations.

- PIGORS, PAUL. *Leadership or Domination*. Boston: Houghton Mifflin Company, 1935. Pp xiii + 354.

A vivid presentation of the meaning of leadership and domination and the functions of authority.

- RICHMOND, WINIFRED V. *An Introduction to Sex Education*. New York: Farrar and Rinehart, 1934. Pp. xiv + 312

A discussion of the nature of sex and some of the problems growing out of it.

- ROGERS, JAMES E. *The Child and Play*. Based on the Reports of the White House Conference on Child Health and Protection. New York. Century Company, 1932. Pp 205

An excellent presentation of play as a need of childhood and provision for play in the home, the school, and the community.

- RUSSELL, DAVID H. *Characteristics of Good and Poor Spellers*. New York. Teachers College, Columbia University, 1937. Pp. 128

A scientific study of the characteristics of two groups of children — one good and the other poor spellers

- SCHEIDEMANN, NORMA V. *The Psychology of Exceptional Children*. Boston: Houghton Mifflin Company, 1931. Pp. xvii + 520

Volume I presents suggestions for diagnosis and remedial procedures based on research on the more common types of atypical children; Volume II covers the less readily recognized forms of deviation.

- SETH, G., and GUTHRIE, D. *Speech in Childhood: Its Development and Disorders*. New York: Oxford University Press, 1935. Pp. x + 224.

A book intended primarily for medical practitioners and psychologists but also of value to parents and teachers who are interested in the nature and development of speech, the more common speech disorders and their prevention and correction

- STODDARD, GEORGE D. (Chairman) "Mental and Physical Development," *Review of Educational Research*, VI (February, 1936), 1-152.

An excellent summary of physical, mental, and motor develop-

ment and relationships between these factors from birth to maturity

- STRANG, RUTH. *The Role of the Teacher in Personnel Work* (revised edition) New York Teachers College, Columbia University, 1935 Pp xiii + 417

A discussion of the teacher's contribution to child guidance.

- STRANG, RUTH. *Counseling Technics in College and Secondary School*. New York Harper and Brothers, 1937. Pp x + 159

A brief treatment of the interview, observation, rating, autobiography, records, and case study

- THOM, DOUGLAS A. *Child Management* (revised and enlarged) Children's Bureau Publication No. 143. Washington, D C, 1937. Pp 107.

A concise, sound discussion of the psychological background of child training and guidance as well as of many specific problems

- THORNDIKE, EDWARD L., BERGMAN, E. O., COBB, M. V., and WOODYARD, ELLA. *The Measurement of Intelligence*. New York. Teachers College, Columbia University, 1926 Pp xxvi + 616.

An authoritative answer to questions concerning the nature, meaning, and measurement of intelligence.

- THRASHER, FREDERIC M. *The Gang*. Chicago. The University of Chicago Press, 1927. Pp. xxi + 571

"A study of 1313 gangs in Chicago."

- VAN WATERS, MIRIAM. *Youth in Conflict* New York. Republic Publishing Company, 1926. Pp. xix + 293

Vivid records of and reflections on numerous juvenile court cases

- VERNON, P. E. "The Stanford-Binet Test as a Psychometric Method," *Character and Personality*, VI (December, 1937), 99-113

A systematic discussion of the Binet Test as a successful compromise between the psychometric and the clinical approaches.

- WOODY, CLIFFORD "Arithmetic," *Review of Educational Research*, V (February, 1935), 14-30

A review of the literature from July, 1930, to July, 1934, on special methods and the psychology of arithmetic.

PART VI

THE ADOLESCENT YEARS

CHAPTER XXII

DEVELOPMENT AND GUIDANCE OF ADOLESCENTS

In 1936 it was estimated that there were twenty-one million youth between the ages of sixteen and twenty-four in the United States. Of these, 7,600,000 were employed, 4,000,000 were in school; 2,800,000 were married; and 5,000,000 were unemployed, seeking jobs. These and other figures give a quantitative idea of the importance of this age period.

The first step in any discussion of adolescence should be to acknowledge the ineffectuality of the efforts of adults fully to understand this stage of development and the comparative futility of their fragmentary knowledge against the complexity and individuality of the behavior of teen-age boys and girls. There may even be a danger in the fact that the generalized knowledge they possess about adolescents may give them a false sense of understanding. Yet this need not be the case. Effective guidance should grow out of knowledge, not out of ignorance. A summary of the facts about adolescent growth and development should encourage, and not impede, the adult in learning as much as possible about a particular adolescent and dealing with him individually on a realistic basis. Nor should the available knowledge lessen the humility with which adults approach the guidance of adolescents.

INDIVIDUALITY OF ADOLESCENTS

Adolescents are persons. The period presents a panorama of personalities. Individuality and integration of personality which are evident, to some extent, at birth and which develop during the preschool and elementary school years, blossom during adolescence. Notwithstanding the common

characteristics incorporated in individual personalities from the surrounding culture which give an appearance of uniformity to any group of adolescents, each boy and girl has an individuality of his own.

The following diverse items have been mentioned by one group of graduate students as characteristics of adolescents they had known: a desire for expression and attention; headstrong; yielding; self-conscious; cruel, tender; self-centered; self-effacing, emotionally unstable; interested in clothes, in the opposite sex, and in adventure, quick tempered, ambitious; rebellious, co-operative; uncertain of his own abilities and having a tendency toward hero worship; sentimental; defensive, boisterous; affectionate; courteous; shy; well-poised; moody; discontented. Inconsistency in adolescent behavior, long ago recognized by G Stanley Hall,¹ may be noted by any parent and teacher. Observation of any group of adolescents will show (1) diverse characteristics among individuals of the same age and sex, (2) inconsistent behavior in the same individual at different times, and (3) characteristics which may be observed in persons of all ages.

It is obviously impossible to outline any general pattern of adolescent development which would fit all members of this age group. There is no typical adolescent. There are many different routes from the inconsistency of immaturity to the equilibrium of maturity. A study of the route an individual child takes is fascinating and rewarding. Great individual differences exist in physiological maturing, physical growth, and social and emotional development. For that reason blanket statements as to procedure cannot be given. More important for educators is a knowledge of technics of studying adolescents.

A number of significant adolescent studies² are under way, but have not been published at the time of this writing. The American Youth Commission has collected, by means of

¹ G Stanley Hall, *Adolescence*, Vol. II, pp. 75-94 New York: Appleton and Company, 1904

² Information from unpublished report made by C Gilbert Wrenn, University of Minnesota.

a carefully constructed interview, information upon the background, present problems, interests, and attitudes of some 20,000 young people. The Progressive Education Association is making what might be called a psychoanalytic approach to the study of adolescent behavior and an important curriculum study. The Shady Hill School at Cambridge, is collecting, under the direction of the Harvard Psychological Clinic, facts which may throw light upon the emotional patterns of children. At the General College of the University of Minnesota another major study on the characteristics of adolescents is under way. Particular emphasis is being placed upon the home and community background which may affect the college student's attitudes and behavior. The two studies at the University of California, one in the Child Welfare Institute and the other in the University High School, have direct significance for the guidance of adolescents. The former is a developmental study of physiological, social, and emotional development and maturation changes during a period of the six years preceding and following puberty. The adolescent study at the University High School is a study *in vivo*, as it were. The methods of collecting, analyzing and recording information, the curriculum problems, and the guidance procedures are being developed in a natural school situation.

GENERAL NATURE OF ADOLESCENCE

To many teachers and parents the most obvious adolescent quality is the amazing alteration between adult reactions on the part of youngsters and utter childishness. At one moment they seem much wiser than their befuddled elders, and the next moment they may be children again, quite desperately in need of grown-up help and affection.

Adolescence is a significant segment of life, extending from puberty to adulthood. It is part of the individual's continuous development toward maturity which begins with conception and never is completed in every respect. At a point of time called puberty which covers an undefined range of years, usually between the ages of twelve and

twenty-one, the majority of boys and girls in the United States achieve physiological maturity, they become capable of reproducing their kind. In addition they approach their maximum height and develop adult contours of body, they give the appearance of being adults. They likewise approximate mental maturity. During these years, which are usually designated as the adolescent years, boys and girls normally make marked progress in their development from dependence to independence, from irresponsibility to responsibility, from interest in their own sex to interest in the opposite sex, from "rugged individualism" to socialization, and from unco-ordinated aims and purposes toward an integrated personality.

PHYSIOLOGICAL MATURITY

Physiological maturity is attained at puberty which marks the beginning of the adolescent period. This maturing of the sex organs and changes in gland secretions takes place in the span of years centering around the ages of thirteen to fourteen. In the United States approximately half of the girls may be expected to become capable of bearing children between the ages of twelve years six months and fourteen years six months. Boys mature, on the average, a year later. Within the normal range, however, the variation is wide. It is possible to find individuals who reach the age of puberty as early as nine years and as late as eighteen.

It is generally assumed that some of the vague uneasiness of adolescence arises from the sex function, yet no one knows precisely the psychological and social effects of physiological maturity. Certainly the effect varies with different factors such as the individual's conception of maturity and the cultural pattern. If the changes that take place at puberty are looked upon as something to be feared, they will cause uneasiness or more serious emotional disturbances. If, however, they are welcomed as an essential part of life, their influence will tend to be beneficial.

It is probable that physiological maturation is accomplished throughout a period of years. Differences in rate

of development in this function probably exist from very early childhood. Precocity of pubescence is related to acceleration in mental test curves of children long before the earliest signs of puberty.³

PHYSICAL MATURITY

The youth of sixteen approximates adult size. He looks like an adult, but his maturity is not always psychological and social as well as physical. For that reason he is frequently misunderstood.

Physical maturity is indicated by growth in height and weight, the quality and extent of calcification of the wrist bones, and changes in body form.

The Prepubescent Growth Spurt — The acceleration in rate of growth which G. Stanley Hall described in 1904 as a prelude to puberty has already been discussed (see pages 437-439). This growth spurt is one indication of approaching physiological maturity.

It is significant that girls take precedence over boys in this accelerated growth. The large majority of girls reach their maximum rate of growth between the eleventh and fourteenth years inclusive, whereas boys usually show their greatest increase in stature between the ages of fourteen and sixteen years inclusive. "At fourteen years of age the post-pubescent boy or the average exceeds the pre-pubescent of the same chronological age by over four and one half inches in height and almost twenty-three pounds in weight."⁴

The age at which the growth spurt appears varies in any individual case with the age of the onset of puberty. Accordingly, a general knowledge of growth tendencies during this age period will not enable the teacher or parent to predict the course of growth for a particular boy or girl. Although the development of an adolescent cannot be pre-

³ Ethel Mary Abernethy, *Relationships between Mental and Physical Growth*, Monographs of the Society for Research in Child Development, Vol. I, No. 7. Washington, D. C.: Society for Research in Child Development, National Research Council, 1936.

⁴ Hedley S. Dimock, "A Research in Adolescence. I, Pubescence and Physical Growth," *Child Development*, VI (September, 1935), 179.

dicted, it may be sympathetically observed. There is no escape from studying the individual and no reason for attempting to do so.

Precocity of Girls over Boys in Physical Development. — It is evident that the growth curves of boys and girls do not run parallel. Girls tends to be taller and heavier than boys of the same age prior to their pubescence, while boys tend to regain their childhood advantage over girls between the ages of fifteen and sixteen years.

Boys and girls are approximately two years apart in skeletal development when they enter high school, if chronological age is used as the basis for entrance. High-school pupils of the same chronological age show approximately two years of sex difference in skeletal development. These facts must have some influence on scholastic success, mental development, and the social adjustment of pupils as they pass through high school.⁵

Boys continue to grow in height and weight during college years, attaining their maximum stature, on the average, at about nineteen years and continuing to grow in weight.⁶ Girls, on the other hand, tend to reach their maximum height and weight during high school years, growing very little while in college.⁷

X-ray Evidences of Anatomical Growth. — A more technical measure of anatomical maturity is the X-ray picture of the wrist bones. At birth there are only three wrist bones that have begun to be ossified, and these are ossified only in small areas. Other wrist bones do not begin to calcify until the child is ten or eleven years of age. According to Flory, "osseous development seems to be more closely related to puberty than is physical size."⁸ T. Wingate Todd

⁵ Charles D. Flory, *Osseous Development in the Hand as an Index of Skeletal Development*, p. 128, Monographs of the Society for Research in Child Development, Vol. I, No. 3. Washington, D. C. Society for Research in Child Development, National Research Council, 1936.

⁶ Harold S. Diehl, "Heights and Weights of American College Men," *Human Biology*, V (September, 1933), 445-479.

⁷ Harold S. Diehl, "The Heights and Weights of American College Women," *Human Biology*, V (December, 1933), 600-628.

⁸ Charles D. Flory, "Predicting Puberty," *Child Development*, VI (March, 1935), 5-6.

of Western Reserve University has arranged a series of X-ray pictures showing anatomical development in terms of changes in size of the wrist bones, which bones are ossified, and the extent to which the epitheses are joined to the long bones

Extreme Deviations in Growth. — Being extremely different from the group in body type, in stage of maturity, in rate of attaining maturity and in body symmetry presents problems. It has already been mentioned that the exceptionally short boy and the exceptionally tall girl tend to feel out of place in a social group of their own age. Although, in general, during the preadolescent acceleration the taller children tend to make larger gains than the shorter ones, there is some evidence that a short individual is not so likely to maintain his initial stature classification as is a "tall" or "medium" boy or girl. It is comforting to a short boy to know that about a third of those initially classified as "short" have reason to expect a rating of "medium stature" at a later examination.

Changes in Body Form. — The growth of different parts of the body is of practical interest to parents and teachers insofar as it indicates (1) uneven growth which may cause adolescents to worry over their physical appearance, (2) the outward appearance of maturity, (3) the adequacy of physiological functioning, and (4) an interference or aid to better motor ability

The face changes in proportion, becoming deeper and longer in comparison with its width. During childhood years the legs grow more rapidly than the thighs, while the reverse is true during adolescence. Careful measurement of foot length showed no indication of general disproportionate growth of the feet at sixteen years of age.

Individual adolescents experience temporary awkwardness and poor co-ordination as a result of rapid and uneven growth. However, observation and tests of the muscular co-ordination of 200 adolescent boys⁹ did not show an increase

⁹ Hedley S. Dimock, "Significant Problems in Guiding Adolescent Boys and Girls," *Educational Trends*, V (January-February, 1937), 18-24

in awkwardness. In fact, there was a general and continued improvement in motor ability, only less rapid during the years when the boys arrived at pubescence. Since co-ordination of movement comes with practice, a decrease in this ability would not be expected in schools which provide adequately for the physical development of their pupils. Awkwardness sometimes is confused with embarrassment. An adolescent may appear awkward in a social situation with which he feels inadequate to cope. This social awkwardness may afflict the football player who out of doors shows excellent motor co-ordination.

Educational Implications of Physical Growth.—While boys and girls are attending junior high school, approximately nine-tenths of the girls and approximately three-fourths of the boys experience the “pervasive psychobiological changes which cluster around puberty.”¹⁰ The acceleration in velocity of growth is plainly evident during these junior high school years. In the same grade there will be boys and girls who have not yet reached the stage of acceleration in physical growth, others who are very rapidly increasing in size, and still others who have passed through this stage of development. Similar variations will be found among junior high school students as they develop toward sex maturity. This variation in “timing and degree of acceleration” in body size and proportions and sex maturity is especially significant as between boys and girls.

These facts have several important implications for the school program. In the first place, a wide variety of activity ranging from rest lying down to vigorous physical exercise is needed for boys and girls. For some of them are growing so rapidly that additional strain upon the alimentary, circulatory, and other organs must be avoided, while others have a “dynamic urge for big-muscle activity.” The present school program is especially lacking in provision for the

¹⁰ Herbert R. Stolz, Mary Cover Jones, and Judith Chaffey, “The Junior High School Age,” *University High School Journal*, XV (January, 1937), 63-72.

children who need more relaxation and less activity and who need to be shielded from fatigue and too many stimuli

In the second place, the fact that girls tend to grow up approximately a year earlier than boys may give rise to problems of social adjustment in the junior high school organization where the adolescent girls are limited to association with the still immature boys of their own age.

No child who comes to high school should be worse off for being there. The school environment should promote his well-being. For example, a cafeteria that offers wholesome food in an attractive inexpensive form guides adolescents in the choice of an adequate diet, especially if they discuss food choices prior to going to lunch. A recreational program, so attractive that it invites boys and girls to play out in the sunshine, and gives them a mastery of skills needed in social living, is excellent indirect guidance. Similarly all the activities of the school may influence a student's development and should have educational value for him.

The health program is only one of these aspects, and should not be set apart but merged into the total school environment. An effective health program, accordingly, demands flexibility—flexibility in the curriculum, in the pupils' schedules, in the few necessary rules, and in the mind of the administrator. Such flexibility will insure that no reasonable request of a child, a parent, or a physician will be refused.

Some of the adjustments most frequently made to the health needs of adolescents are: a modified physical education program providing rest for some pupils, restricted physical activities for others, corrective exercises for still others, and vigorous large-muscle recreation for many; lightened academic programs; partial day programs; mid-morning lunch; contacts with the home; assignment to a special health room; special adjustments in the classroom such as seating to meet visual or auditory needs; a modified recreational program; financial aid; and extra sets of textbooks.

These adjustments are ideally made through a health case conference in which the physician at the end of his day,

the nurse, the vice principal in charge of guidance, the teacher-counselors, and the physical education teachers participate. The physician discusses the case of each child whom he has examined during the day for whom some adjustment is needed. If a change of schedule is necessary, the administrator present makes out the permit. If a modified physical education program is indicated, the physical education teacher is there to discuss the kind of exercise required and to put the recommendation into immediate operation. Frequently the boy or girl is called into the case conference to help make the decision. By means of the case conference the adjustments indicated by the physician's careful examination are promptly made. It is at this point of correcting the health defects discovered in the medical examination that the health program frequently fails.

In addition to the periodic health examination of all students, special examination should be made early in the semester of students who play strenuous games, who have a heavy recreational and social program, or who are going on a long field trip. Children who are returning to school after an absence due to illness should see the nurse and the counselor before beginning regular school work. At the University High School, Oakland, California, which offers an excellent example of the kind of program just described, boys and girls are frequently able to return to school relatively early because of a special convalescent room — a court in the sunshine with steamer chairs which the pupils call "the deck." This room provides the convalescent with a period or two of complete relaxation during the day.

MENTAL MATURITY

Mental Growth Curves. — Boys and girls approach mental maturity during the adolescent period. The upward trend of mental growth, as measured by the tests now available, shows a moderate decline in rate of growth beginning in early adolescence.

Decline in the total intelligence test scores in later years may be due to the fact that adults, as they grow older, exer-

cise their minds less and less with such materials as are found in psychological tests. This explanation is supported by the fact that the decline is not apparent on all tests nor in all groups. Adults appear to do as well as adolescents on the information and vocabulary parts of the Army Alpha test. Undoubtedly they have a greater store of accumulated knowledge and experience than they had as children and might be expected to derive more of their score from it. Many college students gain in intelligence test scores during the college years. This gain is to be expected, if it is true that group mental tests and educational tests have 90 per cent community of function.¹¹ In addition, the increase in intelligence test scores of college students may be due to actual growth in mental capacity, to its more effective use, to specific training in observation, analysis, and synthesis, as well as to the conditions under which the tests are given.

Gifted children, perhaps due to limitations in the tests, appear to be close to mental maturity at about nineteen years of age.¹² Children of average ability may continue intellectual growth somewhat longer. Dull children show a more constant rate of growth during adolescence.

These facts about the mental maturity of adolescents suggest that they are as capable of thinking for themselves as they ever will be. The intellectually superior high school student is more capable of thinking through his own problems than are some of the adults who attempt to direct his conduct. In order to act with maximum intelligence, however, he needs experience in solving real life problems.

Mental growth is not merely an increase in mental age. It involves the organization of experience and drives to attain certain goals.

Fluctuations in Mental Ability.—Teachers and parents sometimes expect miracles to happen during adolescence. They hope for a sudden change in mental ability, a new

¹¹ Fowler D. Brooks, "Mental Development in Adolescence," *Review of Educational Research*, VI (February, 1936), 85-101.

¹² Leta S. Hollingworth and Ruth M. Kaunitz, "The Centile Status of Gifted Children at Maturity," *Pedagogical Seminary and Journal of Genetic Psychology*, XLV (September, 1934), 106-120.

birth of intellectual powers. This hope, however, is not supported by experimental evidence

Analysis of mental-growth curves for individuals, and for groups of boys and girls approximately homogeneous in age of physiological maturing, fails to give indication of positive acceleration in mental-growth rate during early adolescence . . . The present data offer no support for the theory that changes in rate of mental development may be explained as concomitants of abrupt physical events. . . . The data for these groups (selected on the basis of age at onset of puberty) show that growth rate in height and in weight is increased during the year preceding the year of onset of puberty, but the mental-growth rate, as measured by the test employed, is not similarly affected ¹³

Thus the majority of gifted children may be expected to remain superior in the kind of ability measured by intelligence tests. In a relatively few cases, miracles apparently do occur. A child who initially tested low, having been freed from emotional inhibitions or having, in the interim between tests, enjoyed an environment far more stimulating intellectually, may show a marked increase in score on the second testing. A drop in intelligence quotient, on the other hand, sometimes is due to limitations in the test used.¹⁴ Under certain constant conditions of environment and testing, intelligence test results obtained in the later preschool years gave a good indication of relative rank to be expected on the American Council of Education test which was given to the same children in senior high school. There appears to be a very real advantage of mental precocity during the preschool ages. Whether the intellectual level of an individual child markedly changes from the preschool years to senior high school ages or remains relatively constant depends upon a number of factors. Of these the most important are environmental conditions. Experience in a good

¹³ Ethel Mary Abernethy, *Relationships between Mental and Psychical Growth*, p. 68.

¹⁴ Frank N. Freeman, "Intellectual Growth of Children Based on Repeated Tests," *Abstracts of Papers at the Cleveland Meeting, 1934*, pp. 19-20. Year-book No. 22, National Society of College Teachers of Education. Chicago: University of Chicago Press, 1934.

modern nursery school and elementary school made a difference in later intelligence quotients.¹⁵

Educational Provision for Different Levels of Ability — The responsibility of the school for students of varying scholastic aptitude is effectively stated by Briggs as follows:

If an equal opportunity is guaranteed for youth, it must be a differentiated opportunity. . . It is only through an education varied so far as possible to suit all sorts of different people that the highest dividends can be paid. If differentiated education is not offered in secondary schools, there is no insurance that the great majority of adolescents will get such training as will contribute best to their happiness and to their effectiveness. . . . There would be much more unanimity in the support of high education and in requiring continuance at school if there were any degree of certainty that each youth were pursuing studies that are with a fair degree of certainty suited to his aptitudes and needs. It is in the early years of the secondary school that these must be sought. When by exploration of individual differences the school learns what a youth is good for, the preparation of an appropriate curriculum and the assignment of him to it follow as a necessary consequence.¹⁶

Education of the Gifted Adolescent. — Opportunities for an environment of scholastic experience for gifted children are possible both in segregated and in heterogeneous groups. In any intellectually stimulating environment, gifted children of their own initiative will do extra work in science, mathematics, English composition, and music. They may, in addition, explore unbeaten tracks in history and make progress in conversational French or in some other foreign language without detriment to their achievement in the prescribed school subjects. "In view of the disagreement among the results of studies of the effect upon prescribed subjects of homogeneous grouping of highly intelligent children, the question cannot be considered closed, but is open to more extensive investigation."¹⁷ After reviewing four

¹⁵ Beth L. Wellman, "The Permanence of Early Training Effects on Intellectual Growth," *Journal of Experimental Education* (December, 1937).

¹⁶ Thomas H. Briggs, *Secondary Education*, pp. 226-227. New York: The Macmillan Company, 1933.

¹⁷ Howard A. Gray and Leta S. Hollingworth, "The Achievement of Gifted Children Enrolled and Not Enrolled in Special Opportunity Classes," *Journal of Educational Research*, XXIV (November, 1931), 255-261.

common provisions for the needs of gifted children, namely enrichment of curriculum, acceleration, special classes in all subjects, and special classes in selected subjects, Grover¹ advocated a flexible program based on a counseling system and adequate cumulative records whereby gifted children would be located early in their school careers. He would also suggest continuous adjustments as they progress through school.

Education of the Nonacademic Adolescent.—The traditional high school was pitched for boys and girls above average in mental ability. And in 1896 this was the case. Since that time there has been a 1000 per cent increase in attendance at high school, and a definite decrease in average mental ability. It has been estimated that during a generation the median intelligence quotient of high school students has decreased from 130 to 100. From 1921 to 1930 the average intelligence quotient in a certain state decreased from 108 to 100.

Yet in many high schools the curriculum has not been changed. In these schools the nonacademic pupil is considered "a nuisance," a necessary evil following the depression. The college preparatory curriculum has not been sufficiently supplemented to make success possible for these pupils.

This failure to provide suitable education for the nonacademic boys and girls, who are required by law to attend school or who cannot find employment, has serious social as well as personal consequences. It has been estimated that 20 to 30 per cent of the delinquent population up to twenty-one years of age are feeble-minded, 60 per cent fall in the dull-normal group with intelligence quotients from 80 to 100, and 20 to 30 per cent in the average and superior group with I.Q.'s from 100 to 140. The feeble-minded require special education and the dull-normal can succeed in some types of vocational work and adapted academic subjects.

¹⁸ Charles C. Grover, "Gifted Children in Elementary School," *The Nation's Schools*, XVI (July, 1935), 12-16.

Traditional high-school education is unsuited to approximately three-fourths of the delinquent group.

It is not astonishing, therefore, that delinquency is associated with school maladjustment. Truancy is many children's solution to an unhappy school situation. Truancy, in turn, often leads to association with experienced delinquents. The delinquency of urban boys is predominately group activity; lone offenders are in the minority. Such participation in crime leads to court experience which alienates the adolescent still more from his normal group and may start him on a criminal career.

A school system which could put to use all the talents of all the children would be a good preventive of delinquency. Some of the children would participate in running the school cafeteria; others would help to keep the school clean; still others would make materials of instruction for younger children. In such a school no child would have a chance to fail. The delinquent population is included in the school enrollment; it flows out of the school and sometimes back into the school. The school, therefore, is the strategic place from which to attack the problem of delinquency. Delinquency cannot be understood until the development of conduct from early years to maturity has been studied.

No discussion of adolescent problems is adequate that does not recognize individual differences in mental ability. This factor is involved in the education of adolescents, in their gaining of independence, and in their social and vocational adjustment.

Individual Tests of Intelligence.—These are the most useful in the study of problem cases. On the basis of his experience and analysis of a number of tests in a child guidance clinic in London, Vernon¹⁹ suggested the following battery as especially useful for normal or supernormal adolescents over fourteen years of age:

¹⁹ P. E. Vernon, "A Study of the Norms and the Validity of Certain Mental Tests at a Child Guidance Clinic," Part II, *The British Journal of Educational Psychology*, VII (June, 1937), 115-136

Burt-Stanford-Binet.

Burt's Graded Word Reading test, in the extended form.

Moorree's Formboard scored for "speed" and "power."

Porteus' Mazes, scored in the usual way and for speed.

Healy Picture Completion II and (or) the Passalong test.

Group Intelligence Tests.—Tests suitable for different groups in the adolescent years are:

Kuhlmann-Anderson Intelligence Test for grade 9 to maturity. Minneapolis Educational Test Bureau. 25 tests, \$1.25.

Otis Self-Administering Test, Higher Examination, Forms A and B. Yonkers-on-Hudson: World Book Company. 25 copies of test with manual, \$1.25.

Terman Group Test of Mental Ability, Forms A and B for grades 7-12. Yonkers-on-Hudson: World Book Company. 25 copies of test with manual and scoring key, \$1.20.

American Council Psychological Examination for High School Students (L. L. and T. G. Thurstone). New form each year. Contains A.C.E. Artificial Language Test. Washington, D. C.: American Council on Education. 100 tests, \$7.00

Achievement Tests.—Among the large number of achievement tests the following are widely used:

Co-operative Achievement Tests in English, Foreign Languages, and Mathematics. Grades 8-12. 437 West 59th Street, New York City: Co-operative Test Service. Cost varies for different tests.

Co-operative Test of Social Studies Abilities. Grades 9-12. 437 West 59th Street, New York City: Co-operative Test Service. 5 cents a copy

Co-operative Contemporary Affairs Test: Part I, Public Affairs; Part II, Esthetic Interests. Grades 9-12. 437 West 59th Street, New York City: Co-operative Test Service. 6 cents a copy.

Inglis Tests of English Vocabulary, Forms A, B, and C for high-school years. New York: Ginn and Company 30 copies of one form, \$0.75.

Iowa Silent Reading Tests, Advanced, for grades 9-12. Forms

A and B. Yonkers-on-Hudson, New York: World Book Company. 25 copies for \$1 40.

Progressive Achievement Tests, Advanced Battery, Forms A and B, for grades 10 to college freshmen 3636 Beverly Boulevard, Los Angeles, California: Southern California School Book Depository, Ltd. 25 tests, manual of directions, answers, norms, and class record sheets, \$1 50.

Traxler Silent Reading Test, Forms 1 and 2, for grades 7-12. Bloomington, Illinois: Public School Publishing Company. 25 copies of test, \$1 50.

SCHOLASTIC MATURITY

Academic immaturity is evident in the study and reading habits of high school and college students. There are few, if any, students who have attained their maximum study efficiency and many in every class who spend three or four hours on an assignment that should be read in one hour.

Study Habits. — The study habits which most clearly appear to differentiate the superior from the inferior student²⁰ are the following: gets lessons alone, follows closely the material presented by a classmate or by the teacher during a recitation period, likes reading above all other types of activities, tries to interrupt study at a natural break in the printed material, has a definite time for the study of specific subjects, and marks up personal books in order to make the ideas stand out.

The Problem of Reading. — During high-school years the problem of reading is, to a large extent, a problem of reasoning rather than mere mechanics of eye movement. The majority of adolescents have not acquired the higher levels of reading ability.

Thorndike has described thought-getting through reading in terms of overpotency and underpotency of words and phrases. The child who defined *majority* as "the greatest general of them all" was giving too much attention to the first two syllables and too little attention to the last two. The weight given to any word or phrase depends partly

²⁰ Alvin C. Eurich, "An Analysis of Self-Ratings on Studiousness Traits," *Journal of Applied Psychology*, XIV (December, 1930), 577-591.

upon the reader's mind set and, more specifically, upon the purpose he has in mind or the assumptions he brings to his reading. Sometimes emotional associations with certain words give them a potency disproportionate to their true value. Unfamiliar words block the reader's thought and cause him to stumble in his reading.

Good thinking is facilitated by a wide and precise vocabulary. Thought races through familiar fields, anticipating words and phrases before the eye has fully taken them in.

Students' Explanation of Failure.—Homework presents various problems to many adolescent boys and girls. In some schools they find it difficult to gain health and pleasure while meeting the academic requirements. One student expressed the problem as follows:

. . . Too much homework is a problem. If we spend less time than required, we are constantly oppressed by worry and "What'll she say 'cause I haven't it done?" "Maybe I'd better stay home today," "Think she'll give me a three, the old battle axe?" and such common expressions. If we spend enough time, we are oppressed by headaches, weariness, and a general "I feel rotten" feeling.

Perhaps if the teachers could change places with us for a month, they would see our side, and become a little more humane in their dealings with students.²¹

In certain high schools and colleges the assignments are undoubtedly excessive. Nevertheless, many studies of student's actual expenditure of time show that they spend less than three hours a day in home study and have a pleasant, well-balanced program.

In some cases excessive participation in outside activities, rather than the homework assignments, is at fault. This point of view is expressed by a high school girl as follows:

The cause of many failures in high school is due to too many outside activities. A student likes to be known as a "good egg." Through much inquiry, I find that the definition of a "good egg" is that he is a happy-go-lucky, likeable chap who doesn't let his work interfere with anything he wants to do. He is seen at all the dances, he attends all the basketball and football games. In other words, he

²¹ Helen Jacque, "How Live on Twenty-four Hours a Day?" *New York State Education*, XXIV (May, 1937), 594.

is always where there is something doing. Besides all this, he belongs to numerous clubs.

To be an active member of various clubs, one has to support their projects and work hard selling tickets and assisting committees. If he is an officer in the club, there is still more labor and time required. After these meetings, he attempts to do his assignments. He subsequently doesn't get enough sleep and rest. Often he arrives in his home room sleepy, tired out, and about five minutes late.

These social activities are valuable to the student though. He learns how to meet people, how to approach them when selling something, makes social contacts which may help him in later life, and he gains the all-important self-confidence. If an officer, he learns how to lead people intelligently. In the discussions which naturally arise, he has to reason and think for himself. Then he must voice his thoughts in clear, appropriate English so that everyone will understand his viewpoint. The various ventures of the organizations to make money teach him that success is a result of hard labor.

All these outside interests naturally demand much of his time. I think the Board of Education could control the number of school clubs to which a student could belong. It could urge the organizations to demand a certain scholastic standard before admitting a new member. The allotting of a definite task to each member could be planned so that, if the person did not accomplish it, he would be dropped from the club. This would eliminate many and would thus give them more time for their school assignments.²²

Still another student called attention to home conditions that were interfering with her happiness and her school success:

A problem that has been bothering me for some time now has to be solved. Gaining independence is a hard matter to be considered. If you are not treated practically the same at home as you are in school, there is going to be trouble in one of those places. The home is your first school and that should be the foundation of the rest of your life. The school proper is the second place for education. If you are given a fair amount of freedom there, you must expect the same at home. But if it is not the same, then the child will begin to have trouble with his parents. That is one of my greatest problems today.

Although it is hard for me to solve this problem, I do the best I know how. First, I am far enough along in school now that I understand how I should be treated. Second, I have accepted much advice

²² June Harrison, "Pro and Con," *New York State Education*, XXIV (May, 1937), 611.

from different members of the Franklin Central School faculty, individually. Third, and last, I have tried to do as my parents have taught me to do.

How I dread to leave school each night and start for home because I can imagine what will happen. When I do get home it is almost impossible for me to devote two hours of my time for school work. I just have to keep on doing house work. Maybe once a month I am allowed to go out in company. I can't be trusted. That is the way it looks to me. It certainly does make me feel almost worthless. Times without number I have asked mother to go too, if she thought I could not be trusted. But she will not.

The Franklin Central School has done much for me in the line of gaining my independence. The school faculty (certain members of it) have looked into the matter and have made it much more pleasant for me at home. Sometimes I am allowed to take part in evening entertainments at school. There is a chance to have a little freedom. The school has basketball games which I may attend occasionally.

Parents should realize that schooling is important to the child and that schooling includes these out-of-school activities.²³

Students themselves rarely mention as a cause of failure the fact that high schools now have enrolled thousands of boys and girls who lack the capacity to deal with words, symbols, and abstract ideas. In one school of 2,000 students 700 failed. Of these, 228 had intelligence quotients below 100, and failed even though they were taking the easiest courses the school offered. No one wants to go to a school in which he is failing. Moreover, no school has a right to put children who are compelled by law to attend it in a situation in which they have no chance of success. The ideal school should stimulate the gifted to the optimum of their achievement and, at the same time, offer opportunities for those who lack the scholastic aptitude to deal with abstract subjects. Provision could be made for the abilities and needs of all students if the school were considered an integral part of community life which in itself is educative.

Teacher's Explanation of Students' Failures.—The three reasons which teachers give most frequently for pupils' fail-

²³ Grace Wescott, "Gain Your Independence," *New York State Education*, XXIV (May, 1937), 603.

ure in school work are slow learning, inattention, and poor previous preparation. Teachers emphasize factors within the pupil; and while they recognize home conditions as possible causes of school failure, they tend to ignore faults in the school system and especially in their own teaching. Teachers should recognize the fact that some children are slow to learn and should not expect the impossible of them. They should be alert to detect defects in vision and hearing, malnutrition, tuberculosis, and other physical handicaps.

An analysis of causes of poor educational achievement placed ineffective habits of work first and personality difficulties second. Other factors which have frequently been associated with failure in academic work are:

1. Frequent change of schools in the first year or two often gives a child a bad start in the tool subjects and in his idea of himself with reference to school achievement.
2. Absence is associated with failure in academic work but whether as cause or effect is not known. Poor health may cause absence and also reduce energy while at school.
3. Foreign language in homes is not necessarily related to failure, especially in high school.
4. Economic factors—working long hours, helping to support mother, being too tired to pay attention to school work, and staying home because of poor clothing—have been responsible for failure in some cases.
5. Parents' attitude. Parents who object to their children's studying at home, show no regard for school achievement, blame the school and teachers, and encourage the child in a rebellious attitude frequently contribute to their children's failure.

The most important point in dealing with the problem of failure is to encourage the student to make his own analysis of the difficulty and to take the initiative in solving it with whatever expert help he can obtain.

Remedial Work.—There is a possible danger in indiscriminate remedial work—the danger of subjecting individuals to the strain of trying to achieve beyond their capacity. Pavlov reported what corresponded to a mental break-

down in certain of his dogs, resulting from too great difficulty in the experiment. Liddel obtained a similar neurotic reaction in several of his sheep when he increased the number of daily tests. The animals became stubborn and nervous and would not go willingly to the laboratory. Similarly a student may break down in a situation with which he cannot cope. Thus, although it is possible, in most cases, through continued practice to raise the individual's level of performance, the value to him of the increased achievement must be taken into consideration.

One reason for the ineffectiveness of a good deal of remedial work is the failure to interpret errors in terms of their meaning to the individual. An error in one case may be due to a temporary lapse of attention; in another case it may be due to actual ignorance. The psychological nature of the error and the processes leading to it are different for each individual and therefore cannot receive the same treatment.

EMOTIONAL MATURITY

Nature of Emotional Maturity. — The paths to emotional maturity have not yet been charted. Emotional behavior is an emergency reaction to situations with which the individual is unable to cope. When placed in an environment in which they can live wholeheartedly and constructively, children discard the patterns of emotional behavior which have become inappropriate to their present stage of development. They gain increasingly in self-control and in more efficient modes of expression. Emotional maturity in an advanced culture implies a control of the situation that reduces the destructive effect of strong, primitive emotions. The emotional reactions of a mature person have reference to the total situation whereas those of an immature person are chaotic and irrelevant to the total situation.

Biological and chemical changes accompanied by glandular disturbances and the development of secondary sex characteristics are one cause of unrest during adolescence. These physiological changes probably intensify the individual's

awareness of physical sensations and his feelings toward people. But there are also psychological and social factors involved.

Adolescents lack status. They are neither children nor adults and have difficulty in learning what is expected of them. The adolescent who has established his status with his own age group usually is able "to maintain his ego courteously" and does not often give way to emotional outbursts. He recognizes his strengths and weaknesses and is able to view them objectively; he is affectionate toward his parents, but not dependent upon them; and he has a fairly well-formulated life goal or purpose.

It has sometimes been dogmatically stated that a condition of emotional upheaval is inevitable in adolescence, because of the introduction of new glandular elements into the organic economy. No proof has ever established this as a fact. Emotional outbursts are common to those who feel uncertain of their status, quite regardless of the age of the glands.²⁴

There are different levels of emotional response not at all alike in their effect on the general well-being of the individuals. A mild emotion heightens thought and feeling and increases the general tonicity of the body, whereas intense emotion, long continued, tears down body reserves of energy and is debilitating. Accordingly, moderation in emotional response rather than total abstinence is recommended. Adolescents are not abnormal in enjoying a measure of excitement and the feeling of vitality that accompanies a harnessed emotion.

Opinions differ regarding the desirability of giving way to strong emotions. According to one view, yielding to an emotion increases its intensity and gives practice in lack of control. Another view emphasizes the desirability of expressing an emotion. For normal adolescents the constructive use of the energy released by the emotion is the psychologically approved way out.

²⁴Leta S. Hollingworth, "The Adolescent Child" in Carl Murchison's *A Handbook of Child Psychology* (second edition revised), p. 883. Worcester, Massachusetts: Clark University Press, 1933.

Falling in love represents growth toward maturity insofar as it is an indication of interest in persons less like oneself and of the ability to feel for and give to another person. Before falling in love the adolescent usually has had the emotional experiences of sharing with his gang, of growing socially, of having deep friendships, of making sacrifices. Genuine love for another person demands still more emotional maturity and many naturally lead to an interest in social problems and concern for the welfare of all members of the community.

Factors Influencing Emotional Development.—It is no simple thing to discover the cause of an adolescent's behavior, for such causation is exceedingly complex. It extends backward to the first year of life and horizontally into the spacious present. The whole sequence of an individual's acts viewed in the matrix of background conditions should be considered as operative in any one act. It is artificial to designate one particular event as the sole antecedent. This complexity must be kept in mind in any discussion of separate factors.

An adolescent's emotional difficulty frequently has its source in the attitudes and relationships to which he may be exposed in the home. The following attitudes and conduct of parents undoubtedly subtly influence the emotional development of their children:

1. Considering the child as a menace, a nuisance, an interference with their preferred plans, a joy-killing responsibility, a source of anxiety.
2. Considering the child as an asset to be exploited, an evidence of the parents' superiority.
3. Using the child as an opportunity for them to exercise their feeling of power which previously has been thwarted.
4. Using the child as a means of fulfilling the parents' inadequate love life.
5. Subjecting the child to unwholesome attitudes toward sex and family life; toward authority, birth, and death; and to detrimental conversation.
6. Being confused with regard to the child's growing up. One minute the parents may want their son to be grown up,

and the next minute they "can't bear to have their baby grow away from them." This attitude is prevalent among mothers who have "given up everything for their children."

Society intensifies this conflict. During the war society encouraged adolescents to grow up quickly, because youth were needed to bear the brunt of the war. During economic depressions there is a tendency to prolong childhood. Adults feel that they cannot afford to let the youth grow up because they might take adults' jobs. Accordingly, boys and girls who have made or could make a successful adjustment in industry but who are academic failures are sent back to school. The adolescents themselves waver between the comforts and security of childhood and the responsibilities of adulthood. Rarely do parent and child coincide in their desires. The adolescent behaves in a childish way when his parents expect mature behavior and the parents may be overconscious of his immaturity at the moment when he feels an urge to assert his independence.

It is more important that parents and teachers control, if possible, their own attitudes and acts which are emotionally wrecking the child than that they attempt directly to modify his behavior. Many parents of adolescent boys and girls are themselves experiencing the physiological changes of later middle life which may make it more difficult for them to deal effectively with the adjustment problems of their children.

Study of Emotional Development.—So important are family relationships in the child's development that it often is desirable to use as the starting point the sociological study of the child's role in the family instead of the individual approach. The sociological approach gives a complete genetic picture of the development of the parent-child relationship; it emphasizes the totality of the child's experience rather than isolating a single experience and treating it out of perspective.²⁵

²⁵ Harriet Mowrer, "The Study of Marital Adjustment as a Background for Research in Child Behavior," *Journal of Educational Sociology*, X (April, 1937), 487-492

Disobedience as a Complex Response. — "Disobedience," for example, should be reviewed in its total setting. Sometimes adolescents are disobedient in self-defense. Their best development demands disobedience. Adolescents may disregard rules because they seem unimportant in comparison with their on-going activity. An adult would resent an unreasonable interference with his plans for the afternoon. Why should not a full-grown boy likewise show resentment when his plan is rudely disrupted? On other occasions adolescents are apparently disobedient because of their lack of knowledge. They "mean well," but either do not know what is expected of them or how to do what they know is required. Frequently the disobedience of adolescents is their only way out of a difficult situation. They are embarrassed, or afraid, or discouraged and take any avenue of escape that is offered.

Attitude toward Rules a Sign of Maturity. — It is surprising that adolescents are not entrusted with more responsibility for making rules and regulations and for planning activities in the school, the dormitory, and the home. They are fully capable of doing so.

By the time a child reaches adolescence he had come to think of rules as something made co-operatively and modified or maintained by group consent. Therefore, for adults to impose many rules and to demand strict conformity to them is to discourage rather than to promote growth toward maturity.

Forms of Control. — Certain parents and teachers seek to prevent adolescents' emotional outbursts by maintaining strict discipline. The results of such discipline vary with the nature of the child. The timid adolescent may develop a tendency to deceit and untruthfulness; a strong-willed and self-reliant youngster will show obstinacy and open rebellion and probably experience an intense sense of injustice. Adolescents welcome a certain amount of authority; it adds stability to their environment. But it must be authority that is recognized by the boy or girl as reasonable and necessary.



Underwood & Underwood

HIGH-SCHOOL PUPILS WORKING ON A SCHOOL NEWSPAPER

From work on a school newspaper, many kinds of learning may result—growth in coöperation, the taking of responsibility, opportunity for friendly association of boys with girls—as well as training in accurate and interesting written expression and in other features of journalism.

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Another form of control is the taboo. In primitive society it takes the form of a fear of going counter to custom that is stronger than the fear of pain or death. In civilized society the taboo is almost equally potent in the form of social disapproval or disgrace, loss of prestige, being considered "different" from the group.

Suggestion may be an effective method of control for good or for harm. An adult frequently makes a casual suggestion which the adolescent takes seriously and which changes his idea of himself or modifies his behavior in a less fundamental way.

Control by love is sometimes almost as detrimental to an adolescent's development as is control by physical force. The sensitive child is kept dependent by this more subtle but real form of parental dominance. It is more difficult for some adolescents to extricate themselves from the affection that threatens their independent adulthood than from the compulsion of physical force.

Avenues to Independence.—A child does not gain independence by being inhibited by fear, by having his problems solved for him, or by having difficulties removed from his path. The best thing that a parent or teacher can do is to provide a rich environment for the adolescent which he can explore and in which he can discover for himself something socially valuable that he can do. This insight into his own capacity, this testing of his powers becomes a driving force within himself and one of the most potent factors in personality development. Nothing contributes so much to the integration of personality as the mobilization of one's powers in accomplishing a task that is socially desirable and personally satisfying.

Success for any individual does not depend upon the absolute degree of accomplishment alone, but upon the relationship of the accomplishment to the goal, or level of aspiration, which the individual has set for himself. If he falls short of that level, he has a feeling of failure; if he surpasses it, he experiences success. A number of gifted persons, William James, for example, have at times considered themselves

failures in spite of their notable achievements. The adolescent's level of aspiration is extremely important in his emotional adjustment and the finding of appropriate personal goals essential to his usefulness and happiness.

As a result of lack of purpose, adolescents have resorted to running away, drinking, and other attempts to escape from a life that gives them no legitimate satisfactions.

Unsuccessful Emotional Development.— One of the most serious forms of emotional maladjustment that occurs during adolescence is dementia praecox. The steps by which a child moves into this undesirable path of development may be described as follows:

1. He begins to draw upon his inner life because he has been rebuffed and unable to get the things he wants. He makes the discovery that it is pleasant just to dream about these desires. An adolescent with this tendency may appear reticent, stubborn, or negativistic, and may brood over real or fancied injustice done to him. It must be remembered, however, that the case histories of many adolescents who do not go over the line of abnormality show many of these characteristics.
2. Later he may adopt a character or role.
3. If the outside world remains hostile and he gets into a jam doing the wrong things, he may find himself dreaming when he ought to be acting, and has insufficient energy left for the pursuit of adult interests.
4. After an individual reaches the stage where he is unable to get out of the dream world, the chances of curing him are slight. Such an individual becomes increasingly unhappy in any role and derives no nourishment from outside contacts.

Any of the habits, attitudes, beliefs, and social forces that are in back of human acts may become overpotent and drive the individual into abnormal behavior. Certain sets of unconscious factors may tend to determine the direction and strength of emotional responses. Thought processes may be dominated by self-interest rather than by logic and reason. Abnormal behavior as observed in psychotic adults begins to appear in children approaching the time of puberty.

SOCIAL MATURITY

The Social Aspect of Puberty. — *Social* may be interpreted with reference to society or in a more limited way with reference to personal relationships. In the first sense, puberty is recognized as a social, not a biological phenomena in most cultures. The pubic ceremonies are the formal recognition of the child's new status as an adult and vary with the ideal of adulthood in the society. In a tribe in which stoicism is required of the adult, the pubic ceremonies include ingenious tortures. In a culture in which the adult ideal woman is almost as broad as she is long, the girls at puberty are segregated and fed fatty food and sweets. Their exercise is restricted so that they may emerge in the approved adult pattern, so fat that they can hardly waddle.

In the course of an individual's participation in a social environment, the social customs and values of the world about him become built into his personal system of values and attitudes and dominate his subsequent experience and reactions toward people around him.

In our own civilization, adolescents are astride two cultures. Their parents' world has changed so rapidly that their ways and their thoughts are not the ways and thoughts of their children. It is therefore difficult for them to have a sympathetic understanding for each other. The conflict is intensified when the older generation is removed from the younger generation not only in point of time, but also in geographical background.

Social maturity, in the large sense, involves social sensitivity and the desire, capacity, and opportunity to render a significant social service.

Development of Social Sensitivity. — The nature and development of social sensitivity has been studied by Hilda Taba as part of the Progressive Education Association Eight Year Study.²⁶ Social sensitivity involves awareness to social

²⁶ Hilda Taba, *Social Sensitivity*, Progressive Education Association Evaluation in the Eight Year Study, Bulletin No. 6. Columbus, Ohio: Ohio State University. December, 1936

problems and a sympathetic, openminded response to them. Its constituents are attitudes, dispositions, and understandings. It is a fusion of intellectual and emotional factors. Social sensitivity leads to action; it should not be confused with social sentimentality. If teachers are aware of the specific abilities to be developed and alert to the opportunities for such development in group activities, they will further the development of this quality among adolescents.

Without guidance, adolescents are not likely to obtain the kind of experiences they need for their best development. A study of the leisure time activities of junior high school students probably is typical of many boys and girls.²⁷ The activities most frequently reported were in order: listening to radio, chiefly entertainment features; attending motion pictures, 84 per cent of which were considered unsuitable for children; reading tabloid newspapers and magazines and books of similar quality; and playing unsupervised on the streets.

An Illustration of an Integrated Curriculum.—The curriculum of the school is soil out of which habits of acting, thinking, and feeling grow. If it is dry as dust, it cannot be expected to yield a rich harvest of habits. Children learn by thinking, feeling, and doing. The so-called integrated curriculum is being developed in a number of progressive high schools. Its success depends on the extent to which it meets the needs of adolescents and is developed co-operatively with teachers, pupils, and experts. In one high school, for example, a broad topic, the story of mankind, has been chosen as the general theme for study. In order to avoid superficiality, certain units of work are selected. The seventh-grade curriculum serves as an orientation course. In this first unit, pupils begin to get a sense of time and become aware of the eons that have passed since life on this world began. The next year they are engrossed in the study of Egypt, visit the Egyptian exhibits in the museums, create Egyptian art and music, and obtain an almost first-

²⁷ R. Robinson, "Leisure Time Activities of New York's Lower West Side," *Journal of Educational Sociology*, IX (April, 1936), 484-493

hand impression of that civilization. Whenever appropriate, modern events are brought into the picture. In general, however, the students are encouraged to get a perspective of the past before seriously discussing the present. When technical questions arise, the science teacher, the natural history teacher, and others come in to discuss them with the pupils. In the same year they study Greek culture and are interested to see how the Greek torch of learning is being carried on to the present day. They become aware of the fact that they must know and experience a great deal in order to write creatively.

The ninth grade becomes engrossed in the religious upheaval of the Middle Ages, the status of science at that time, the literature produced by Shakespeare, and the industrial revolution leading up to the study of factory life today. The central core of the tenth grade is American life; of the eleventh grade, cultures other than our own; and of the twelfth grade, modern American problems.

A good teacher has always co-ordinated other subject matter with his own subject, but the integrated curriculum demands of all participating members of the faculty a high degree of willingness to co-operate and to re-think subject matter. It demands a faculty that does not work by the clock. The teaching load of one teacher in each grade is reduced so that she will have additional time for the co-ordination of the program and for work with individual pupils in the grade. She meets with the teachers for three hours one afternoon a week, visits many classes, and talks with many individual teachers and pupils.

The guidance of individual pupils is an essential part of this program. There are no failures in the ordinary sense of the word, for a place where he can succeed is found for each child. If such a place cannot be found, a change of schools is recommended. Every month teachers report on students who are exceptional in any respect. Once a year a qualitative report of the pupil's intellectual, social, and emotional progress is sent home to the parents.

Opportunities for Social Service.— Every youth normally desires the opportunity to be of service. In the school environment, this should be possible, as has already been suggested. Furthermore, the school should prepare each adolescent, whether he has one talent or ten talents, for the distinct service he can render. It is a basic need to have a feeling of being of value in one's group and of having the stimulus that comes from successful participation in a group project. The most menacing aspect of widespread unemployment is the lack of opportunity, in spite of training and ability, to achieve vocational success and to participate as an adult in the world's work.

The extent to which youth is serving the community is indicated by the results of a survey undertaken as a WPA project.²⁸ "Education-as-community-improvement" was carried out in the fields of community health and public safety, civic beauty, agricultural and industrial improvement, and civic arts and local history. In one rural high school, the students obtained from the parents, grandparents, and other living relatives accounts of early days in the country—fascinating pioneer stories which otherwise might never have been recorded. There is no reason why the school curriculum should not be vitalized and contribute to the improvement of social conditions. Such education is highly motivated and gives students a feeling of being of service in their community.

Social Needs of Adolescents.— As boys and girls grow into adolescence, their preoccupation with social activities is an outstanding characteristic. This fact has recently been supported by the records, test results, observations, and interviews with students at University High School, Oakland, California.²⁹ The clubhouse, established for the boys and girls in the University Adolescent Study and their friends, made no appeal to the children in the seventh grade

²⁸ P. R. Hanna, *Youth Serves the Community*. New York: Appleton-Century Company, 1936

²⁹ Herbert R. Stolz, Mary Cover Jones, Judith Chaffey, "The Junior High School Age," *University High School Journal*, XV (January, 1937), 63-72.

who were more interested in team games or in individual activities. In the eighth grade, the boys and girls were at first interested in coming to classes in photography, interior decorating, dramatics, and shop work at the clubhouse, and later in the year increasingly used the clubhouse as a place for unorganized social contacts with both sexes. By the time they had reached the ninth grade, they were definitely using the clubhouse as a place in which to work out their own social relationships.

In this urge for social activity, the adolescents' desire for group approval is evident. This desire motivated many of their activities. The clubhouse enabled them to try out various types of response and to eliminate those which appeared to lessen their own popularity and those which were being used unsuccessfully by others. Some pupils who previously had not been socially successful with their own sex gained acceptance in the group through their popularity with the opposite sex.

During this period of establishing themselves socially, adults appear to be an impediment. They are avoided if possible. Especially is this true of adults who do not understand the group's ways of thinking and acting. The presence of a parent may be considered a hindrance, whereas the presence of a club sponsor who understands the situation is accepted. After passing through this negative phase of resistance to adults, the same boys and girls may seek adult companionship and talk with them as man to man.

Heterosexual Relationships. — The awakening of heterosexual interests has long been recognized as an impelling force in adolescent development. Girls begin to show this social awareness and interest in the opposite sex about a year earlier than boys, and tend to stimulate a similar interest in the boys whom they refuse to leave to their own devices. This difference in age of sex maturation creates a difficulty in social adjustment in the junior high school where approximately two-thirds of the girls at any one time are in the post-pubescent stage while an equal number of boys are still pre-pubescent in attitudes and behavior. Par-

ties attended by both boys and girls are now preferred. Social dancing is the favorite recreation in many high schools. To neglect this phase of development or to put obstacles in the way of it is usually to increase the very aspects of the period that are most disturbing to adults. When boys and girls have satisfactorily achieved status in their group, they are happier and pleasanter, and easier to teach than when they are in the stage of striving for social recognition and adjustment.

Problems of Social Education in High School and College — One problem frequently mentioned by high-school pupils is that of feeling "left out" and "not wanted" by the group. The individual needs a minimum of approval and acceptance among his associates — probably two or three persons who give him a sense of social approval. They complain that a small group in each class "run everything" and do not invite their classmates to help them plan parties, dances, and other activities, but take everything into their own hands. A specific case of the unwanted adolescent is described as follows by a high-school girl:

Most adults would be surprised to know of the absurd class snobishness which exists in our high schools. Something should be done about it.

Let us take Martha White, for example, who came to high school with the idea that it was the place where her existence would be justified. Her family was on the welfare and cared little about the girl. The clothes she wore were barely presentable. Martha's manners certainly were not all they might have been, although she had tried to educate herself along these lines. The main block in Martha's path was, however, her shyness. She could not make herself into a bold, overbearing sort of person that those in her class seemed destined to become in order to move forward. Thank heavens she didn't.

Martha soon began to feel the hurt of being looked at and not seen. She was pushed ungraciously into the arms of a group which certainly was not worthy of her. Maybe, they, too, had been Martha Whites, and had lost courage as she was about to. They no longer seemed to care for anything or anyone but themselves, their homework was neglected, they cared nothing about their classes or improving themselves; and they were seen in places of shady reputation. Why should they strive for anything? Their families certainly didn't

care, and their only friends were like themselves. It was inevitable that Martha should become one of them—unless something was done. The teachers and students of the schools are the only ones that can do something. They must be made to realize the far reaching effects of their lamentable snobbishness. If a more fortunate student were unofficially to take under his wing one of these unfortunate fellow students and introduce to him or her the little, but important tricks of dress, manner, and habit, I believe that there would be a great difference in other students' attitude toward the Martha Whites of the school. They should be made to realize that they are as important as the next one, and they should also be led into activities where they can acquire new friends and perhaps become known because of hidden abilities. If this were accomplished in a school, that school would have succeeded in overcoming one of the most important problems of mankind.⁸⁰

The dean of girls in high school and the dean of women in college have done a great deal to help adolescents solve this problem. They have given individual students and committees a point of view which has helped them to practice social sensitivity in school relationships and to recognize the educational possibilities of group activities. They have asked committee chairmen whether it would not be a good idea to choose members of their committees on the basis of the student's need for experience as well as on his ability to do the special work required. In order to facilitate choice, deans have made accessible to student leaders a card file of the student body containing the special interests, abilities, and previous participation in the so-called extra-curriculum activities of each student.

In one high school an all-school party which took the form of a barn dance provided opportunities for many boys and girls to work together and to make a contribution to the project as a whole. Committees were organized to take responsibility for different parts of the program. The decoration committee worked hard for more than a month in transforming the gymnasium into an attractive barn. The refreshment committee planned, purchased, and made arrangements for serving the "eats." The reception committee

⁸⁰ Marion Pierce, "Can the School Help the Martha Whites?" *New York State Education*, XXIV (May, 1937), 592.

planned ways of making everyone who came feel welcome. The program committee solved the problem of providing entertainment for a wide range of ages and socio-economic status. After the party the committees evaluated their work and made recommendations for the next party. An occasional question, point of view, suggestion, and expert advice whenever it is needed, coupled with freedom to develop the social program according to their ideals has resulted in student leadership that is social rather than selfish.

The art teacher and the home economics teacher make a special contribution to the problems of the Martha Whites by giving specific information and experience in improving personal appearance and in being at ease in any group. Boys as well as girls want to know "the thing to do," so that they will not feel awkward and inadequate in the new situations with which they are confronted. Instruction in social usage has its value, but it is not a substitute for experience and a genuine kindness of character. Natural opportunities for association with socially sensitive persons is the best way to acquire social skills. An adolescent who has participated in school parties which are wholesome and thoroughly enjoyable has developed standards and attitudes which will influence his choice of recreation in the future. Guidance through experiencing is the most effective form of guidance.

Education for Marriage and Parenthood — Adolescence is too late to begin sex education. It should be taken care of objectively and casually in the preschool and elementary school years. There is a possible danger of developing a sense of guilt or fear if instruction is given too late or introduced too suddenly. However, many high-school students have not obtained accurate information and, accordingly, as in so many other fields, remedial work must be done in this field also. The best way of accomplishing this is to answer the students' questions directly in personal conferences and to think through the curriculum to find the places where sex education may naturally be given. This may be in biology; in social science; in literature, especially through a study of

biographies dealing with emotional and sex problems; in art; and in social activities. A number of colleges are developing splendid courses in the broad aspects of family life.

The age at which it is lawful for boys and girls to marry without their parents' consent varies in different states and countries. In New York State it is illegal for girls under sixteen years of age and for boys under eighteen years to marry without their parents' consent. Because financing of a family is so difficult, mating has been longer and longer delayed. Instead of marrying during early adolescence, young people wait until they are twenty or twenty-three years of age, on the average. The intellectuals delay marriage still longer, until they are twenty-seven or thirty years old.

Love and Friendship in Adolescence. — Before the age of marriage, however, love affairs are prevalent, reaching a peak of frequency between sixteen and twenty years of age. Adolescent boys occasionally fall in love with women older than themselves; and girls, with older men. In general, however, a member of the opposite sex of approximately his own age is most attractive to the adolescent.

The practice of "petting" may be an outward evidence of this adolescent love interest, or it may be an expression of deprivation of affection at home or a way to popularity. Its danger lies in the fact that it excites the emotions and the desire for sexual intercourse. It is an individual problem and should be handled individually. The recommendation arrived at by one group of college girls — "practice moderation in petting, not total abstinence" — would appeal as reasonable to the majority of adolescents.

Strong impulses are not easily diverted. If the stimulus of the opposite sex is absent, the love impulse tends to find expression in relationships with the same sex. Prolonged segregation of human beings from early years might lead to lack of interest or delayed interest in the opposite sex when opportunity was offered. This is a possible danger of segregation of the sexes. In many homes and schools the child's contacts are almost exclusively with one sex. In the home the father is away most of the day, and in the school the

majority of teachers are women. If the girl goes to a girls' school and to a girls' camp, her opportunity for frequent contacts with men and boys is eliminated. All children need constructive contacts with their fathers and other men, and more natural opportunities for relationships with boys and girls of their own age.

Adolescent crushes are most prevalent in girls' schools and girls' camps. Normally this phenomenon does not last as a habit, although it may be troublesome for the teacher or camp counselor. Crushes differ from adolescent friendships in more frequently involving jealousy, being exclusively between two persons, shutting out other friends, and being more intense. Boys' attachments to one person takes the form of hero-worship. Teachers must recognize that the attachment indicates a need for affection or for a concrete standard of the kind of person he would like to be. The adult should treat such attachments kindly but without becoming emotionally involved. Frequently the adolescent's affection may be transferred to some more appropriate object.

Adolescents need friends. Chums of their own age in whom they can confide and from whom they can ask advice are indispensable. Contemporaries help one another to discover and develop the kind of self each wants to be. They help one another to shape the nebulous self in each of them. Adults do not serve this purpose so well as contemporaries because their understanding of the younger generation is never perfect and because most adolescents have had sufficient experience with unsympathetic adults to fear their ridicule and lack of understanding.

CHARACTER DEVELOPMENT AND JUVENILE DELINQUENCY

Factors in Character Development. — Character in English schools is a by-product of associations and behavior of teacher and pupil. It is developed in the process of living together. In a sense, it is caught, not taught.

Successful living in any culture demands a certain amount of conformity. Laws must be obeyed. There are certain at-

titudes held in common; certain rules of conduct that must be observed; certain common purposes that develop as interdependence increases. These common purposes, attitudes, and ideals are woven into a moral imperative that guides conduct even when reason or will fails to function. As children grow older, they can assume more and more responsibility for conforming to laws made for the common good.

Cost of Juvenile Delinquency. — It has been estimated that the annual cost of crime in the United States amounts to half the national debt, or about nineteen billions of dollars. Theoretically it seems entirely possible to reduce this enormous expenditure by effective education.

Factors in Juvenile Delinquency. — It is important to recognize school, home, and community conditions and sequences of behavior that lead to the special kinds of development designated as delinquency. None of the factors that appear to be related to delinquency appear in isolation. Yet some of the following factors operate in most cases of juvenile delinquency: badly conducted home — too lax or too strict; lack of sympathy, understanding, and security at home; unsuitable school curricula and methods; and corrupt neighborhood and lack of constructive social agencies.

Of these influences Healy and Bronner³¹ found parent-child relationship and attitudes to be the most clearly related to delinquent behavior. One child in a family who had even a single source of affection — someone who believed in him and loved him — would not take the path to delinquency whereas a brother or sibling lacking this satisfactory personal relationship would be started on a career of crime. The well-adjusted child appears to have a more normal amount of satisfaction through approval and acceptance whereas the delinquent child receives an excess of either solicitude or neglect or is subjected to other unfavorable parental attitudes.

A special analysis of the records of one thousand juvenile

³¹ William Healy and Augusta Bronner, *New Light on Delinquency*. New Haven, Connecticut: Yale University Press, 1936.

delinquents³² leads to the conclusion that one factor in the delinquency among children of foreign-born parents arises out of the conflicts and problems resulting from the differences in culture between the first generation Americans and their parents.

There is no one cause of delinquency. It is a kind of development resulting from the interaction of many forces in the home, school, and community acting upon the unique personality of an individual.

RELIGIOUS MATURITY

Perhaps one should speak of religious security rather than religious maturity, yet there is an achievement in philosophy of life and orientation to the universe that is religious in nature. Only human beings of a certain level of intelligence desire to discuss religious questions or to seek a logical explanation of the universe. The feeble-minded and young children, except the very bright, do not have religious doubts and questions. Between the ages of fourteen and twenty the individual's power to think and to reason matures.

Religion becomes a psychological problem of adolescence because intelligence has developed sufficiently to make abstract ideas meaningful and because plans for the future are needed and can be made. Religious interest, however, is not entirely intellectual. It may be intensified by other impulses such as altruism and falling in love. It may be involved with nationality and racial problems. Being of mixed parentage, for example, may make finding the self and one's place in the universe difficult.

The development of maturity in point of view is aided by learning aspects of reality through science and by gaining perspective and a sense of time continuity through history. Some sort of religion, not dogma, gives orientation in the universe. The church supplies an appropriate place to worship and a quiet time in which to view one's life in relation to ultimate forces. Social aspects of worship give a

³² Eleanor T. Glueck, "Culture Conflict and Delinquency," *Mental Hygiene*, XXI (January, 1937), 46-66

sense of solidarity and a unity of purpose. True worship has therapeutic value.

The roots of true religion are laid in childhood but frequently fail to come to fruition in later years. The following thoughtfully written philosophy of an outstanding high-school girl expresses well a common adolescent attitude toward religion.

My whole philosophy of life can be summed up in one word—humor. To me there is always a funny side of everything that happens. Even though I enjoy funny things, I like to talk about serious things such as evolution, politics, and hobbies.

I go to church regularly. Religion is an essential part of everyone's life but the services fail to impress me and through the week I forget about religion entirely. The chief reason I go to church is that my parents want me to go. I believe in life after death chiefly because that belief was taught to me as a child and I have never had the initiative to doubt it. I am almost afraid to think about that question for fear I will come to a negative conclusion and I really want to believe in such an after-life.

A sound philosophy of life grows out of knowledge. Frank admirably describes the contribution of historical and scientific facts to the development of an adolescent's point of view:

The need of youth and of adults is for coherent, interrelated ideas, conceptions, and meanings drawn from and solidly supported by scientific research, but presented so that they are meaningful and congruent. Without a firm conviction of the nature of the universe and man's place therein, human personality can find only a precarious foothold for the life career. . . . These altered views of man's place in the world must be accomplished by a revision, drawn from our growing scientific findings, of man's relation to his society and to other individuals, especially in the family, to provide a coherent basis for his conduct.³³

VOCATIONAL MATURITY

As the student goes through high school, he becomes more and more concerned with choosing, preparing for, entering, and succeeding in an occupation. The following quotation

³³ Lawrence K. Frank, "The Task of General Education," *The Social Frontier*, III (March, 1937), 173.

from a high-school junior probably is typical of the attitude of many adolescents:

Where do I go from here? What does the future hold in store for me? I am now at what has been called the threshold of life, and opportunity is calling from every way. The compulsory twelve years of staying in school have passed. I can stop here and *do* what or go on with education and *be* what? Who can help me answer these things? Which way shall I turn?

I would further my education by going to a state college or university. This would lead to perhaps being a teacher. This vocation somewhat appeals to me perhaps because my father, mother, and four sisters before me have become teachers. But yet there is a certain monotony about this life that can only be realized by close contact with it. Would I be satisfied with living the same life over day after day and year after year as most teachers do? I think I should like to hitch my wagon to a higher star than that.

I should like to be some kind of artist. I don't know what kind because our school has never given any art courses. There are hardly any magazines or books in the library which pertain to different kinds of art. I would go to a college to learn about art but don't know what colleges have the best courses or the course I should like most to major in. Where shall I find out about these things? Do I have enough artistic ability for it to pay to go on with this work? I don't know.³⁴

Among the twenty thousand occupations there is work that can be done by individuals of every degree of mental ability. Able-bodied, feeble-minded women having a mental age of one year can fetch and carry; those having a mental age of three years can do simple housework and work on the farm. Adolescent boys with a mental age of five years have done garden work, stable work, simple factory work, and cleaning duties such as scrubbing floors. Girls of the same mental age have done domestic work, and have prepared vegetables, followed a simple pattern in sewing and folded paper bags. Physically mature boys of a mental age of six years are engaged in farm work, dairy work, and laundry work. They serve as unskilled laborers and assistants to skilled laborers. Anyone physically and emotionally able with an intelligence quotient above 50 can do unskilled labor. Mature girls of

³⁴ Ruth Stephenson, "Hello . . . What?" *New York State Education*, XXIV (May, 1937), 589

the same mental age follow similar kinds of occupations in the domestic service fields. With a mental age of ten, boys can be employed as machine operator, electrician's helper, painter, and in similar occupations. Girls having a mental age of ten years can operate machines, do more patterned type of hand work, and serve as salesgirls. Carpenters must have an intelligence quotient of about 100, clerical work requires an intelligence quotient of approximately 110 or higher; and standard medical schools and schools of law exclude all but the top 5 per cent in mental ability.

An individual may be too intelligent as well as not intelligent enough for a particular job. If he is too intelligent for it, he will feel dissatisfied and tend to leave it for another as soon as opportunity offers. A number of firms have abandoned the policy of employing the most intelligent persons they could find because, under that policy, their turnover was so high.

An attitude of pride in all kinds of worthy work suited to the individual's ability should be developed. Attaching emotional satisfactions to the occupational area in which a person has the greatest chance to succeed is essential to a happy vocational adjustment. Such adjustment frequently is prevented by parents who show pleasure when their child expresses a desire to be a doctor, but are displeased when he says he wants to be a bricklayer. They want their child to have a position higher up the socio-economic scale than they had regardless of his ability to attain a conventionally "superior" vocational status. Less than a fourth of American children want to follow their parents' vocational path.

Mental level, however, is not the only determinant for occupational choice and success. The individual's physical appearance, his emotional development, and other personality factors must be considered. The most difficult adolescents to place vocationally are those who are emotionally unstable as well as mentally defective. Accordingly, one must study the personality factors before beginning to train any sub-normal boy or girl for a position. Individuals with orthopedic defects are less difficult to place, and have been

found to engage in a normally wide distribution of occupations.

Try-out experiences in different kinds of work have long been recognized as an important phase of vocational guidance programs. Part-time or summer work gives a student a surer basis for judging whether a certain kind of work is likely to be congenial to him. Try-out experiences contribute to the training in versatility which is a present-day emphasis. The development of adaptability is a requisite for vocational success in a changing world.

There are many evidences of concern for the vocational problems of youth. Certain city counseling programs give free counsel to any youth or adult and co-operate with the State and Federal services in sharing information about occupations and training facilities. Still more careful co-ordination with educational institutions and with recreational and voluntary service organizations is needed. The American Youth Commission³⁵ and the National Youth Administration, in a still larger way, aim to study the problems of youth, to create new jobs suitable to them, and to help them find other jobs and to prepare them for available positions. At the same time recreational needs and facilities are being studied and more neighborhood social centers under the supervision of trained leaders are being planned. The committee on Youth Problems of the Office of Education, U. S. Department of Interior, has prepared a series of bulletins, one of which³⁶ presents the results of surveys made to learn more about the needs, interests, conditions, and hopes of youth. In 1935 the Office of Education assisted in a co-operative survey covering facts of education, employment, and recreation in thirteen communities.

There is need for a central research bureau for collecting and disseminating monthly information on occupational

³⁵ Homer P. Rainey, *How Fare American Youth*, Washington, D. C., American Council on Education, 1937.

³⁶ Carl A. Jessen and H. Clifton Hutchins, *Youth-Community Surveys*. U. S. Department of the Interior, Office of Education Bulletin, No. 18, VI. Washington, D. C.: Supt. of Documents, 1936.

trends and for studying occupations in terms of functions to be performed.

Educational guidance is closely allied to vocational guidance. The selection of courses is complicated not only by inadequate instruments for ascertaining scholastic aptitude, by the complexity of factors that influence learning in a particular case, and by lack of curricular offerings, but also by the general philosophy that makes parents want their children to study subjects associated with a certain social status.

The choice of higher education faces the student graduating from high school. Every high school has many students whose ambitions are far beyond their mental ability and some whose mental ability is beyond their ambition or resources for going to college. It is accordingly important that boys and girls who are likely to profit by a college education be identified early and that provision be made for their higher education.

The question may legitimately be raised as to what is a college education. The mental calibre of the student bodies in different institutions of collegiate rank varies enormously. On the American Council Psychological Examination the median scores of different colleges one year covered a range of from 90 to 249. Obviously a high-school graduate who would be well-adjusted in a college at the lower extreme would promptly "flunk out" in the college that was "out for brains." High-school counsellors frequently have the problem of meeting the request expressed by one parent: "I want you to find a college for my stupid daughter." They also have the problem of diverting pupils and parents from the choice of a college education which is far above the child's level of ability. High-school counsellors may amass information about colleges and other types of higher education not only from college catalogues and books and articles about colleges, but also from letters and interviews with their graduates and their scholastic records. After a time the adviser discovers that a student who makes a *C* in high

school tends to get *C*'s in certain colleges, *B*'s in others, and *A*'s in still others.

A MATURE PERSONALITY

Maturity in personality development may be described in terms of integrative behavior. Anderson³⁷ defined integrative behavior as "a phenomenon of growth in which the individual responds to differences in other persons. In integrative behavior a person yields to another, he finds a common purpose among differences and expends energy with another, i.e., he achieves a change in structure or function, in goals and purposes as a result of encountering persons different from himself. Integrative behavior is spontaneous, dynamic, flexible, changing; in theory it is growth at the optimum."

The mature personality may also be described as one that is organized in relation to some plan for life as a whole. An important unifying factor is a goal. Absence of goals means reduction of potential energy and the consequent incapacity for action. Ideally, organization of life around some central goal begins in early childhood and develops through learning to meet life's problems. Such organization requires a clear idea of what the individual wants to do and to become. It supplies a basis on which specific acts are judged and specific choices made. It directs habit formation.

An adolescent's idea of what he can become grows most naturally out of a situation in which he discovers that he can do something worthwhile. This self-discovery through accomplishment is far more effective than hours of talking about aims and purposes. The importance of setting the stage for an individual's self-discovery of his potentialities cannot be overemphasized.

Development of a Unified Personality.—The integrated personality is built in life situations that evoke wholehearted

³⁷ Harold H. Anderson, "Domination and Integration in the Social Behavior of Young Children in an Experimental Play Situation" Paper read at the 1936 meetings of the Society for Research in Child Development See also his article, "Conflicts in Personality Development," *Mental Hygiene*, XX (October, 1936), 605-613

attention to the task in hand. It is derived from the pressure of will or of a need. Thus good teachers who make education vital and fascinating are helping children to develop effective personalities. Group play, a constructive type of fantasy, art, and biography exert a favorable influence. The ability to reason and to break down the barriers between oneself and others are found in a mature type of personality. Conditions that interfere with the integration of personality are over-rigid training, emotional attachments, "fixed ideas," daydreaming that is detached from reality, and other childish barriers.

Consequences of Failure to Integrate the Personality.—An integrated personality is only approximated, it is never completely achieved. An adolescent has a number of potential selves which he may develop. Failure to achieve a satisfactory integration of conflicting tendencies may result in negativism, in delinquency, in mental disorder and insanity, in alcoholism or drug addiction, or in suicide. Negativism is a manifestation of an insecure self. It is a crude attempt to maintain one's ego and may express itself in impudence and other socially unacceptable behavior. Delinquency is a wrong path, frequently taken because of insufficient intelligence and stamina and guidance in finding a better kind of self. Mental disorder and insanity are additional paths of development which withdraw the person's energy from constructive activities. Habits of drunkenness and drug addiction are other forms of withdrawal from "the emotional hardships of life."³⁸ Suicide represents the ultimate form of withdrawal, when the pain and utter lack of satisfactions in life become too intense to endure.

DIFFERENCES BETWEEN ADOLESCENT BOYS AND GIRLS

There are certain hereditary sex differences. These must be recognized. Boys have a metabolic level about 10 per

³⁸ Leta S. Hollingworth, "The Adolescent Child," in Carl Murchison's *A Handbook of Child Psychology* (second revised edition). Worcester, Massachusetts: Clark University Press, 1933.

cent higher, on the average, than girls. This higher rate of metabolism would tend to make the male more vigorous and active. Girls appear to have an advantage in resisting disease. At almost every age, the death rate is higher for boys than for girls. Fundamentally girls differ because of their functions of menstruation, pregnancy, and lactation.

The question of difference in variability between the sexes has, for many years, aroused interest. Are men and boys more variable in intelligence, height, musical ability, and other traits, or, in other words, are there more extremes of high and low ability among men than among women? No generalization can be made with respect to this question. A thorough, critical canvas of the research on the problem³⁹ arrived at the following conclusions:

1. Physical characteristics—girls show a greater variability for the ages ten to fourteen inclusive, while the boys show greater variation for ages fifteen and up. This variability may be explained on the basis of pubertal changes which have already been discussed.
2. "There appears to be nothing but inconsistency with regard to differences in variability in educational achievement." The same absence of a sex difference was noted with respect to special abilities.
3. On intelligence tests there is a rather significant trend in favor of greater male variation which might be interpreted as meaning that "in general about nine boys to six girls would score above 140 or below 60 I Q. and that twice as many boys as girls would exceed 160 or fall below 40."⁴⁰

PROBLEMS OF ADOLESCENTS

Maladjustment is a kind of personality development. It is often entirely appropriate for an individual although not acceptable to his group. Even the schizophrenic's queer acts are found to be logical if he can be adequately psychoanalyzed. Any behavior which the parent or teacher recog-

³⁹ Quinn McNemar and Lewis M. Terman, *Sex Differences in Variational Tendency*. Genetic Psychology Monographs, Vol. XVIII, No. 1, February, 1936.

⁴⁰ *Ibid.*, p. 57.

nizes as a problem has a history of cause and effect. It is part of a sequence having its roots in the individual's heredity.

Society must become sensitive to the problems of youth, because the basic problems of gaining independence, of marriage, of vocational adjustment, of developing a sense of worth in one's community are essentially social problems. These problems have been discussed at length in books on the psychology of adolescence.

The problems recognized by the students themselves are perhaps less fundamental, but none the less real. The problems they mention on questionnaires, in interviews, and the problems with which they come to deans and other personnel workers are predominantly academic. This is to be expected in educational institutions. It must be remembered, however, that only a relatively small part of the total adolescent population is in school.

Three main problems of high-school students mentioned by one high-school sophomore are: "the budgeting of time, deriving the greatest benefit from his studies, and establishing friendly relationships with other students and teachers." Her discussion of these three problems follows:

The first problem mentioned is, to me, by far the most important. It seems that there are a great many things to be done at one time, and the result is bewilderment and confusion. Then, too, when there are many disagreeable tasks to be accomplished, and one pleasant one, the latter is the one that receives first attention. I have discovered that it really doesn't pay to attempt to do some work to the tune of a "swing band" or to try to concentrate on a book and carry on a telephone conversation. The result is usually disastrous!

If the afternoons are spent sociably, there is only the evening in which to do homework. It is quite difficult undertaking to do lessons, take a bath, manicure fingernails, and do all those other necessary things in three small hours. They fly by all too quickly.

I've discovered through experience and much careful thought, that it is really worthwhile to budget my time and establish some sort of regularity in my habits. Even though it does seem slightly "old-maidish," it pays in the end. (I make exceptions once in a while.)

To be compelled to learn is one thing; to want to learn, another. It is difficult to learn things so that they can be remembered. This, however, is not the case with me. It isn't that my memory is poor, either, because I can distinctly remember things that happened to

me when I was three. It's just that I learn things for a test or for the next day (temporarily, that is) and then forget them. This is true only with work connected with subjects in which I am not or think I am not particularly interested.

The school can help the students in this problem by teaching effective methods of study. It does, to some extent, but not quite enough. If I try to fool myself into thinking that I really want to learn something, it usually "sticks" with me indefinitely. In this way, I am able to conquer one of my problems.

I find it much easier to establish friendly relationships with fellow students than with teachers. Of course this is quite comprehensible, for one can usually get along much better with those of his own age than with those older and more experienced.

It is natural for teachers to feel at least slightly aloof as far as real friendship with students is concerned. By friendship, I mean a fond relationship and complete understanding. I don't think it will ever be much different. I have had one teacher in ten years whom I consider a real friend as well as a perfect instructor.

However, it is usually not too difficult to get along with teachers. I find that, by treating them fairly and doing my best, that I receive the same treatment.

The younger and more modern teachers are attempting to place themselves on an equal basis with the pupils. However, in most instances, they have a long way to go.⁴¹

More emphasis is being given to examining the influence of the immediate environment and the social patterns and customs in an endeavor to find the basis of many attitudes and forms of behavior formerly attributed to the process of physiological maturing. The situation as perceived by the individual is dynamic; it evokes certain behavior. Certain Gestalt psychologists think of these environmental factors as forces acting psychologically upon the individual somewhat in the way that physical forces act upon inanimate objects. The analogy, however, is not perfect because the make-up and present condition of the human organism limits the things that are perceived in the environment and the responses that are made.

The individual's status changes as he passes from childhood to adulthood. The attitude of every member of the

⁴¹ Helen Jane Curtis, "Problems of American School Youth," *New York State Education*, XXIV (May, 1937), 609-610.

social environment toward him changes and his attitude toward them is likewise modified. Thus new relationships and a new position within the group are created. Teachers and parents should guard against suppressing individuality in the process of building conformity to certain cultural demands. They should help students to develop qualities of deviation as well as qualities of conformity.

President Comstock has admirably summarized certain crucial points in regard to adolescence in the following quotation:

. . . In this particular period there is enough maturity for the youngster to take herself in hand. The sixteen-year-old that I know best said not long ago, "I am afraid I am losing my power of concentration," and began to reflect on the possible reason for that loss. I am very certain that no words of mine as to having the radio going while studying could have had so much effect as her own effort to analyze her difficulty.

The spontaneous ardor of childhood still lingers in these years and is, if possible, I think to be conserved. Mary White, as we learn from William Allen White, kept that ardor along with her pigtailed. As William James said, "the great thing is to be saturated with something," and we should think twice before checking any enthusiasm however strange, or before setting up so rigorous a schedule, that this ardor may have no room to effervesce.

As for our own attitude, there are of course some warnings to be observed. Those of you who have read the life of Dwight Morrow by Harold Nicolson will remember that Mr. Morrow is said to have referred to "Rule 6." He had heard of it from a general in the army in whose office he was seated when a younger officer came in to pour forth a tale of woe. The general listened quietly and then said, "Remember Rule 6." The young officer flushed, saluted, and withdrew. "What is Rule 6?" asked Mr. Morrow. "Don't take yourself too seriously," answered the general. "What are the other rules?" "There are no others," said the general. There is a hard saying of William James of teachers, — I am sure a statement made in a moment of irritation, and which I should not think of quoting except in the professional privacy of a group such as this.

"Teachers have less freedom of intellect than any class of people I know. The teacher wrings his very soul out to understand you; and if he ever does understand anything you say, he lies down on it with his whole weight like a cow on a door step so that you can neither get in nor get out."

Another *caveat* is not to conclude too quickly that the prickly and

the temperamental are pathological. It would be a great comfort to all of us if all young people were plump and healthy, placid and smooth. But as Mr. Whitehead says, we are denied that comfort. They may be in need of an expert in psychiatry, or they may be incubating superior powers. The most sympathetic man I know of, the man who has the most happiness in his personal relationships, told me that as a boy he cried every day of his life from hurt feelings. He has transmuted that sensitiveness into sympathy, just as Elizabeth Fry did. Some of the arrogance, rebelliousness, and dissatisfaction may be signs of something capable of great good. What seems disloyalty may be the mark of an eager and idealistic nature striving blindly, stupidly perhaps, to pass beyond lesser loyalties to something fundamental.

Again, we must be constantly on the lookout for the tender, unexpected sprouts of maturity. There is nothing so hard as to step from the post of mentor to the attitude of one adult dealing with another.⁴²

GUIDANCE OF ADOLESCENTS

Is guidance of adolescents possible, or, having reached such a high level of maturity, should they not be left to work out their own salvation? Can the experience they need in order to attain adulthood be provided for them? Must they not actively seek it for themselves and be left free to sink or swim? How else can they attain adult independence? These are pertinent questions.

It would be agreed that adolescents must have experience and practice in self-direction and self-control. The function of guidance is to increase their chances of success in attaining these objectives.

Six main ways in which guidance may thus function are. (1) by making the environment a better place for adolescent development; (2) by modifying the attitudes of adults and other children toward the boy or girl; (3) by helping him to acquire certain athletic and social skills that will enable him to take his place in a group more successfully; (4) by helping him to gain insight into his problems and crises and to discover better ways of meeting difficulties; (5) by providing outlets such as play and creative activities which en-

⁴² Ada L. Comstock, "Not Yet Twenty," *Bulletin of the National Association of Deans of Women*, XI (March 25, 1937), 3-4

able him to resolve his conflicts for himself; and (6) by using special technics as, for example, psychoanalysis.

Guidance through the Environment — Although the environment of an adolescent cannot and should not be controlled as the environment of a small child can be, certain changes may be made which will make the home, the school, and the community better places for boys and girls to grow up. Some environments provide a better opportunity for development than others ⁴³

Conditions that appear to be associated with undesirable forms of development should be eliminated so far as possible. Neighborhoods unfit for human habitation should be abandoned or rebuilt, greater economic security should be provided; cut-throat competition and inadequate wages and unemployment of certain groups should be eliminated; commercialized pitfalls and similar sources of social infection should be replaced by facilities for recreation and other constructive social agencies; obstacles in the way of reasonably early marriage should be removed; and the harsh attitudes toward juvenile delinquents who are first offenders should be changed.

Some of the conditions favorable to adolescent development may be summarized as follows: a curriculum so well suited to the student's capacities that he will experience success reasonably often; facilities and freedom with which to pursue his goals and purposes; the affection and confidence of at least one person who makes him feel that he is loved and accepted even though some of his acts may be disapproved; and the chance to contribute to and win recognition in his social group.

Until these conditions can be changed by intelligent, concerted action, the only other alternative leading to good adjustment is for the individual to develop an immunity to their injurious effects. One task of education is to help children to develop fortitude to withstand frustration and insecurity.

⁴³ Daniel A. Prescott, "Affective Factors in Education," *Occupations*, XIV (May, 1936), 723-732.

Occasionally elements in an individual's environment can be changed or rearranged in such a way as to effect his better adjustment. Teachers have always been interested in the grouping of students for more effective learning. Moreno's⁴⁴ sociometric technic is a scheme for grouping together individuals who will be congenial. By asking children in a class or a school to tell whom they would like to sit near or which house mother they would prefer, the teacher may discover positive attractions and negative repulsions among individuals. By rearranging the social constellations of a group, clashes of personality may be avoided and mutual benefit result.

A flexible social program which caters to small interest groups and a class organization in which students group and regroup themselves in order to work effectively on special projects promote adolescent development through satisfying social interaction.

The homeroom or other group guidance organization, although it represents a compromise, falling short of an ideal integration of guidance with instruction and curriculum, nevertheless has possibilities for guidance. Frequently, however, the values of such periods are not realized because neither students nor teachers desire a homeroom or know how to make profitable use of the time allotted to them. In general, a homeroom period should not be introduced until teachers and students demand it and only as much time should be allotted as they can use to advantage.

Wisely used, a forty-five minute homeroom period once a week with a teacher who stays with the same group of pupils for three or four years offers many opportunities for guidance. At the beginning of high-school life it provides an opportunity for new pupils to become acquainted with the school building, the staff, the curricular and extra-curricular offerings and one another. During the four years it provides time for the discussion of issues that have arisen

⁴⁴ J. L. Moreno, *Who Shall Survive?* Nervous and Mental Disease Monographs, Series No. 58. Washington, D. C.: Nervous and Mental Disease Publishing Company, 1934.

in school life. It offers many opportunities for personality development through its committees, positions of leadership in a relatively small group, discussions, and programs of activities planned and executed by the students. It is a small counseling unit through which a qualified teacher may carry on the processes of student appraisal and adjustment.

More effective than the homeroom form of organization for guidance purposes is the teacher-counselor system in which guidance and instruction are more closely fused. In this ideal set-up, one teacher co-ordinates the education of thirty to forty students. He teaches them in the fields in which he is professionally prepared and brings into the class specialists in other fields. He canvasses the resources of the school and the community for valuable experiences for his group. During his three or four years of such intimate association he is able to study each individual and help him to develop his potentialities.

Guidance through the Attitudes of People toward the Adolescent.—Frequent reference has already been made to the influence of adults' attitudes upon children, but the importance of this influence justifies the emphasis given to it. The case of Robert B., a fifteen-year-old boy, illustrates the way in which family attitudes may wreck one member of the family. The boy was referred to a child guidance clinic for running away from home, playing truant, stealing money from his parents, and fabricating extraordinary stories. Robert's mother was deeply concerned with "doing her duty" and considered Robert a "duty." She had no confidence in him and openly showed her distrust. She was afraid that he would disgrace the family and, in order to prevent such disgrace, she nagged and found fault with him constantly. Robert's father likewise had no confidence in the boy and was afraid he would end up in prison. He was generally severe and impatient with Robert, but not always consistent in his attitude. The attitude of Robert's younger brother, Harvey, was still harder for the older boy to bear. Harvey was held up as an example of virtue; he spied on his older brother, and brought home tales of Robert's mis-

conduct. Naturally Robert's dislike for his younger brother was intense. Altogether Robert was convinced that his parents "had no use for him" and bitterly resented their distrust and lack of confidence in him. It seems obvious that these family attitudes were important factors in Robert's delinquent behavior and unhappiness. The treatment consisted primarily of changing the parents' attitude toward the boy without making them feel that they were to blame for his behavior.

The two outstanding findings of the extensive study of personality development in the home environment made by a committee of the White House Conference on Child Health and Protection⁴⁵ were: (1) such externals of home life as economic status or living conditions are not so significant for a child's personality development as are certain parent-child relationships of affection and confidence, the inculcation of regularity in daily health routines, and the illness or nervousness of parents; (2) the level of family relationships appears somewhat higher for urban than for rural children. This may be due in part to the greater social isolation of the rural child and to the physical proximity of the members of the rural family which does not necessarily lead to a psychological unity. It may, in fact, increase the adolescent's difficulty in emancipating himself from the family. Almost half of the rural boys and one-third of the rural girls spent all, or all but one, evening a week at home while only one-sixth of the city adolescents spent as many evenings at home. Although unsupervised evenings away from home may lead to unconventional behavior, the gain for the adolescent in social experiences with his contemporaries must be recognized. For rural and village girls the church clubs, school clubs, Girl Reserves, and 4H clubs help to meet this need apparently more successfully than similar organizations for boys.

The attitudes of teachers compete with those of parents

⁴⁵ White House Conference on Child Health and Protection, *The Adolescent in the Family: A Study of Personality Development in the Home Environment*. New York: D. Appleton-Century Company, 1934.

in importance. They may influence for good as well as for harm.

There are three concentric circles within which the teacher's influence upon the child may be effective. The first of these is the area of personal teacher-pupil relationship. It represents the circular response of Miss Brown to Jimmy. Jimmy reacts to Miss Brown and her attitude and response to him, while Miss Brown responds to Jimmy as a person and his attitude and response to her. Stoddard⁴⁶ has admirably described the characteristics of a high-school teacher who emerges as a personality and can truly guide the life of a child:

He knows so much, but is modest, he knows his pupils, too, but doesn't badger them. One can detect an underlying rapport, seasoned with wit and humor, which to the strict disciplinarian is almost a teacher-pupil conspiracy. It never occurs to him that any boy or girl would do less than his best and pretty soon they hate to "let him down." Gradually they taste the joys of real accomplishment and are warmed by his sympathetic understanding . . . He is simply a civilized person. His pupils are his companions and friends and they have work to do together—interesting, often absorbing work, which the pupils themselves have organized into meaningful projects and goals. He respects them, there is give-and-take, there is little tension. No one is on display, no grade-book with its minute, mysterious cells is poised over their heads. Mr. Brown is a guide, not a policeman.⁴⁷

The second circle of teacher influence depends upon the well-organized school system. Its teachers have been selected on the basis of their ability to guide pupils; its leadership is expert and democratic; its school plant is conducive to the best development of adolescent boys and girls; its curriculum provides for their varied capacities, interests, and needs, its clinical services are responsible for continuous in-service education of teachers and gives assistance on problems with which the teacher cannot deal because he has neither the time nor the highly specialized knowledge and skill; its

⁴⁶ George D. Stoddard, "Guiding Growing Children," *Understanding the Child*, V (October, 1935), 21-24

⁴⁷ *Ibid.*, p. 22-23

community relationships are co-operative and helpful. In such a school system the teacher's total energy is not consumed in clerical work, unproductive routine, and a dissipation of her attention to far too large a number of children.

Beyond the circle of school influence is the third area of American society viewed as a whole. Conditions existing in present-day society neutralize the favorable effect of the smaller circles of influence. In order to assure an adequate diet, medical service, decent housing and play facilities, expert guidance when it is most needed,

every one of us privileged to guide growing children must do more than our immediate tasks. We must steadily devote a certain proportion of our thinking, feeling, and acting to social change. Not only "What can I, as a person in the situation, do?" but "Why must these things be?" In this way, and in no other, can the guidance of youth be raised above opportunistic patchwork.⁴⁸

As with small children, so also with adolescents, the adult should try to see the world through their eyes. The social world must look different to an adolescent than to an adult who has so much more background of experience for interpreting its phenomena. The adolescent world includes the ideas and behavior patterns that are peculiar to the "gang" or coterie, but it also includes factors transmitted from the adult culture. In order to understand an adolescent, therefore, it is necessary for the adult to view objectively his school, his family, and his community setting as the adolescent perceives it.

What is his attitude toward school? Does he go willingly? Is he enthusiastic and happy, or worried and anxious about his school work?

What is his attitude toward his home? Does he feel that his parents are afraid that he will bring disgrace on them, that they have no confidence in him and slight affection for him? Does he think he is in duty bound to equal the record of a more brilliant older brother? Does his father insist upon his following a specific occupation in spite of the son's disinclination for it? Does he feel that his parents are

⁴⁸ *Ibid.*, p. 24.

competing for his affection and that to obey one would mean disloyalty to the other?

What is his attitude toward the community in which he lives? Does he feel that his family is socially, economically, or culturally at variance with the group as a whole? Does he have a conflict of loyalties between his family and his friends? Does he recognize society's limitations to his behavior?

A sympathetic study of individual boys and girls will at least show parents and teachers the problems which the youngsters are facing. It will reveal their underlying insecurity in new situations, their painful consciousness of their own limitations, their sense of the overwhelming importance of new values, their scorn of childish values, and at the same time their yearning for them, their fluctuation between boundless confidence and a feeling of inadequacy. The adolescent feels that only his own age group understands, for adults live in a different world and never had so hard a time when they grew up.

Guidance through the Acquisition of Skills. — The importance of the possession of academic, athletic, and social skills has been emphasized in previous chapters. These skills play an equally significant part in the social adjustment of adolescents. To study efficiently, and to know how to dance, play tennis, and swim in a group in which these sports are popular, obviously increases a boy's or girl's self-confidence and helps them to acquire status in the group. Some special ability or achievement frequently has been a shy adolescent's ticket of admission to favor with fellow-students and teachers.

Guidance through the Acquisition of Insight and Information. — Insight comes through the recognition of important factors in the situation. It is tied up with the ability to take an objective attitude toward oneself, to recognize one's strengths and weaknesses, and to apply one's intelligence without emotionality to the solution of one's personal problems.

A method of gaining insight into everyday situations may be taught in connection with numerous specific occurrences,

thus somewhat enhancing native perspicacity by instruction. Adolescents may be encouraged to make their own analyses of crises and issues that confront them. They may acquire basic information in personal conferences, in class discussions, or from books.

Still more important is the use of insight and information in the development of purposes and self-determined goals. Obviously goals cannot be thrust upon adolescents, but they can sometimes be suggested on the basis of a thorough study of the individual's present traits and interests. His life purpose should fit in with the existing personality pattern, with the resulting harmony between ambition and ability. The most important cue for some adolescents is to exemplify the words of a popular song: "I like myself as I is." They need to learn to live with themselves.

Insight into complex emotional problems require special guidance. It is here that the specialized technics of the psychiatrist or psychoanalyst are useful in bringing to light the deeper origins of maladjusted attitudes in certain cases.

Guidance through Play and Creative Activities.—Increased emphasis recently has been placed upon play therapy and occupational therapy as means by which children and adults may work through their conflicts and solve them for themselves. There is mental health value in play and creative activity. The wholehearted absorption in such activities is a factor in the integration of personality. In some cases the attempt to put a personal conflict into some art form has reduced the individual's tension concerning it and given him perspective. The writing of autobiographies or life histories might have these values for many adolescent boys and girls. Some probably derive similar benefit from their personal diaries.

Guidance through Special Technics.—Psychoanalysis has emphasized memories of past events as causes of present maladjustment, and undoubtedly has added a great deal to the sum total of knowledge regarding the hidden springs of conduct. The information a child discloses, however, is far from being spontaneous. Many of his associations are

suggested directly or indirectly by the analyst and are interpreted from his viewpoint, which may not coincide with their real meaning to the child. By this process of tapping underlying memories and discussing them, the analyst hopes to re-educate the patient so that he may squarely meet the demands the world makes upon him. The primary purpose of the psychoanalytical interview is therapeutic.

One of the sanest views of the value of this type of study of the individual seems to the author to have been expressed in the following quotation from Pierre Janet:

Memory of the events of one's own life play a part in the development of personality . . . Memories of certain dramatic circumstances to which the subject had not succeeded in adapting himself presented themselves to the mind in the form of unsolved problems, reproduced in pathological form the original emotion, and by means of various mechanisms gave rise to neurotic symptoms

. The search for these memories, though difficult, might in some cases give rise to a very useful psychological analysis

However, is it necessary to conclude that this search for traumatic memory constitutes all *l'analyse psychologique* even in the case of a neurotic? . . . It is often a great mistake to attribute to this or that memory of the patient, even though it be an emotional one, such considerable influence on present disorders. Present exhaustion does not always bear any relation to the more or less conscious persistence of certain memories of this sort. In many cases, the emotional event and its memory have at the start played an important part for a certain period. The disorder to which they have led, the bad thought habits, and the subsequent exhaustion have become independent of the memory itself, and the modifications of the memory do not act upon them.⁴⁹

The possible causative factors in adolescent adjustment are manifold. Among those emphasized by specialists in guidance are:

1. Hereditary constitutional factors. For example, a girl who is six feet tall at adolescence has a problem of adjustment. Her posture is likely to slump and a self-consciousness, due to this one factor that makes her conspicuous, may develop.

⁴⁹ Pierre Janet, "Analytical Psychology," in Carl Murchison (Editor), *Psychologies of 1930*, pp. 369-370. Worcester, Massachusetts: Clark University Press, 1930.

2. Mental retardation in an inappropriate environment.
3. Physical handicaps and diseases. Any adolescent who has a physical handicap may thereby be led into a maladjustment of personality, depending upon how he himself perceives the defect and how other persons react to it.
4. Racial handicap, especially a minority group handicap, as, for example, one or two Negroes in a white community, or *vice versa*
5. Economic handicap. Poverty in and of itself may interfere with an individual's adjustment
6. Family conditions, some of which have already been discussed a broken home or severe family tensions, parental ignorance and indifference, over-solicitousness, or excessive domination, physically, mentally, or emotionally, chronic illness, or intoxication, or drug addiction of members of the family.
7. Bad companions, which like cosmic rays penetrate the individual from the outside.
8. Conflicting ideologies and loyalties. The distance in standards and ideologies between the older and the younger generation is inevitable in a changing world. No adolescent is just like his parent. His pattern of thinking would probably appear as ludicrous to the adolescents of his parents' generation as his manner of dressing and acting.

In dealing with exceptional behavior in adolescence, one should ask such questions as: How far are the characteristics reported exaggerated in the parental mind? How far are they the product of poor standards set before him and represent discrepancies between what grown-ups talk about and what they do? How far is his behavior a result of poor habits of self-discipline from infancy?

STUDY OF ADOLESCENTS⁵⁰

Stages in the Study of Adolescence. — The early study of adolescence was primarily centered in physical growth and

⁵⁰ An excellent brief account of the study of adolescents under normal school conditions is given in an article by Dr Marion Brown "A Study of Adolescents in the University High School, Oakland, California," *Proceedings of the Twenty-First Annual Meeting of the National Association of Deans of Women*, pp 112-121 1201 Sixteenth Street N W, Washington, D C, 1937

anthropometric measurements. That study of anatomical and physiological age has been extended to include more precise measurements of the same children over a period of years and a treatment of the data in terms of individual growth curves and related factors.

The psychological study of adolescents soon gained momentum. Problems of the rate and extent of mental growth, fluctuations in scores on intelligence tests, and emotional stability were included.

A third phase of study concentrated on the social setting of the adolescent. Vital statistics with reference to disease among adolescents were collected, family attitudes and relationships have received attention

The most recent emphasis is on the study of the adolescent's place in the future society. The contribution of society to his development and his contribution to the building of a better society are being seriously considered

None of these aspects of adolescents can be successfully studied in isolation. The trend is toward an understanding as complete as possible of the individual boy and girl in his particular environment. There is evident today an increased desire and ability to study adolescents as individuals and to comprehend them fully.

Technics of Studying Adolescents.—The interview, rating scale, observation, tests, and other technics of studying individuals have been described and discussed in another recent publication,⁵¹ and in previous chapters

The written autobiographies, letters, and diaries of adolescents supply the raw material which throw light on changes in attitude, relationship and the status of the individual as he passes from childhood to adulthood. At their best they show how he sees his social environment, and thus aid the adult in entering more fully into his world.

The case history and the cumulative record which synthesize the information gained from many sources are at present the most promising means for studying the individual as a

⁵¹ Ruth Strang, *Counseling Technics in College and Secondary Schools*. New York: Harper and Brothers, 1937

whole The case history is of value not only in helping individual boys and girls to make the best adjustment possible for them, but also in revealing the needs, pressures, and experiences that should be considered in developing a school program.

One of the major functions of records is to chart the child's advance toward maturity against the social setting of the school and the behavior and background of his group This advance toward maturity should be described in a synthetic way, as a unified picture or *Gestalt* of the individual Charts showing changes in goals and progress made toward them are likewise significant. These cumulative records should be available to the persons who can use such information for the good of the student. Emphasis must be on *use*. Records are never an end in themselves and time should not be spent in collecting information that serves no useful purpose.

Self-guidance. — There is an increasing emphasis on adolescents' studies of themselves. One youngster, after presenting to his mother the reasons why he should be allowed to go out on a particular evening, concluded by saying, "And Mother, you must remember that I am now an adolescent." High-school and college boys and girls are contributing more and more data to their own cumulative records and studying the facts recorded in order to discover their strength and weaknesses, evaluate their progress, and formulate their own purpose and plans. When confronted with problems, they take the initiative in seeking help from adults on their problems and sometimes attend case conferences and participate in the discussion of the progress they have made. In one school they write their own report cards which are then submitted to teachers and parents. This study of themselves, if it takes the form of a periodic, objective appraisal, with definite objectives in mind, should not lead to undue introspection or self-consciousness.

Teachers and parents must realize that their importance in the child's development has now shifted from administrative control to expert advice and discussion.

The Happy Adolescent.—Watson describes the happy child as one “who passes into adolescence so well equipped that adolescence is just a stretch of fertile years—and who finally enters manhood so bulwarked with stable work and emotional habits that no adversity can quite overwhelm him.”⁵²

QUESTIONS AND PROBLEMS

A

- 1 Recall in as much detail and as accurately as possible your own adolescence. Compare your physiological, physical, emotional, and social development with the general tendencies described in this chapter.
2. Study several adolescent boys and girls with whom you have established a confidential relationship. Note their development toward maturity and try to see the world through their eyes.
3. Ask a group of adolescents to write their autobiographies or life histories including not merely the chronological events but also their interpretation of them.
- 4 List specific situations you have met in dealing with adolescents in which you felt the need of more understanding. Gather from your readings suggestions, which will help you to act more wisely in these situations.
5. Work out a plan in which boys and girls in your home, class, or community would be given opportunities for wholesome, spontaneous association.
- 6 What methods of giving vocational information would be practical in your situation?

B

Put a cross (x) in front of the best answer in each exercise.

- 1 The central fact in the study of adolescent development is
 - the storm and stress of the period
 - a new birth of capacities
 - the approach toward maturity
 - establishing heterosexual relationships
2. The essential characteristic of the normal mind is
 - a static condition
 - a conflict
 - integration
 - simplicity of mental processes

⁵² John B. Watson, *Psychological Care of Infant and Child*, p. 10. New York: W. W. Norton and Company, 1928.

3. According to Burnham, essentials of mental hygiene are
 - unexpressed emotions and acts
 - thoughtful deliberation regarding past, present, and future
 - clear recognition of past conflicts and transference of affection to a suitable object
 - a purpose, a plan, and reasonable freedom in carrying it out
4. A fundamental principle of mental hygiene is
 - giving wholehearted attention to the present situation
 - habitually forecasting the future
 - restraining the impulses of the moment
 - working exclusively for distant goals.
5. Personality develops by
 - maturation only
 - adjustment of two crucial periods of life—entrance to school and adolescence
 - having all possible difficulties removed from the environment
 - continuous adjustment between the needs of the individual and the demands of the environment.
6. The best general principle in dealing with maladjusted individuals is
 - to classify the difficulty under a given type and treat it according to type
 - to study the facts about the individual in his environment as a basis for co-operating with him in working out a solution
 - to say to the individual, "well, what's your difficulty? . . . Here's the solution"
 - to resuscitate childhood experiences
7. Studies of primitive societies have shown that
 - women are invariably expected to play the "clinging vine" role
 - men are always expected to be dominant and aggressive
 - women's temperament is always in contrast with men's
 - the temperaments of men and women varied with the culture.
8. The school has most seriously contributed to delinquency by
 - omitting religious instruction from the curriculum
 - carelessly chaperoning parties
 - requiring set standards of verbal accomplishments for all pupils
 - sparing the rod and spoiling the child.
9. Individual instruction in which pupils work independently on contracts is likely to be deficient in
 - personal contacts with teachers
 - supervision and interest of parents

- opportunities to share purposes with a group
- diagnostic and corrective work
- 10. Making a child ashamed of some habitual behavior is most likely to have the effect of
 - eliminating the undesirable habit without harmful consequences
 - adding a deep sense of guilt to the misbehavior
 - causing open rebellion
 - a temporary improvement in conduct and attitude
- 11. Adolescents in the United States are most seriously lacking in
 - opportunities for schooling
 - a worthy purpose to which they are devoted
 - facilities for wholesome recreation
 - knowledge of vocational opportunities
- 12. When an adolescent wants to go out evenings without telling his parents what he is planning to do, the parents should
 - recognize this tendency as a normal sign of growing up
 - become more strict in their discipline
 - consult a psychiatrist
 - try to make the family activities more intriguing.

SELECTED BIBLIOGRAPHY

AICHHORN, AUGUST *Wayward Youth*, with a Foreword by Sigmund Freud, and a note about the author by the editors. New York: Viking Press, 1935. Pp 236

A significant psychoanalytic explanation of delinquency, clearly outlining the author's method of case analysis, the use of psychoanalytic transference and the ego ideal as a therapeutic method for handling the unsocial and delinquent child, the book also contains the description of a specific method of running a training school

ALLPORT, GORDON. *Personality: A Psychological Interpretation*. New York: Henry Holt, 1937 Pp. 565.

A scholarly contemplation of theories as to the nature of personality, the structure of its organization, and the contribution of different schools of psychology to the study of the underlying problems of personality

APPEL, K. E., and STRICKER, E. A. *Practical Examination of Personality and Behavior Disorders; Adults and Children*. New York. The Macmillan Company, 1936 Pp xiv + 219.

A manual to guide the student in the technic of psychiatric observation.

ARLITT, ADA HART *Adolescent Psychology*, with a preface by Cyril Burt London Allen, 1937 Pp x + 246.

A valuable view of adolescence, including theoretical and practical aspects

BIGELOW, MAURICE A *Adolescence: Educational and Hygienic Problems of Adolescence*. National Health Series Edited by the National Health Council (revised edition) New York Funk and Wagnalls Company, 1937 Pp 99

A concise treatise with emphasis on the physiological aspects

BOYNTON, BERNICE *The Physical Growth of Girls* A Study of the Rhythm of Physical Growth from Anthropometric Measurements on Girls between Birth and Eighteen Years University of Iowa Studies in Child Welfare, Vol 13, No. 4 Iowa City, Iowa University of Iowa, 1936 Pp 105

A tabular and graphic presentation of the growth of girls in height, weight, chest circumference, and twenty-two anthropometric measurements

BRESLICH, ERNST R. *The Administration of Mathematics in Secondary Schools*. Chicago, Illinois: The University of Chicago Press, 1933. Pp vii + 407

A comprehensive treatment of individual differences in mathematics and how to make provision for them.

BIGGS, THOMAS H *Secondary Education*. New York: The Macmillan Company, 1933 Pp. x + 577.

An ideal introduction to understanding of the educational setting for young adolescents.

BROWN, MARION. "Training Teachers and Student Teachers as Personnel Workers in Guidance," *University High School*, XIV (June, 1935), 9-22.

BROWN, MARION, CHAFFEY, JUDITH, and MARTIN, VIBELLA "Co-operation of Home and School in Guidance," *University High School*, XIII (December, 1934), 203-211

BROWN, MARION and MARTIN, VIBELLA. "Records as Tools in the Study of Adolescents," *Educational Research Bulletin*, Ohio State University, XV (November 11, 1936), 207-215

A description of the dynamic records developed in the University High School, California

CONKLIN, EDMUND S *Principles of Adolescent Psychology* New York. Henry Holt and Company, 1935 Pp ix + 437

A modern treatment of adolescent adjustments

COLE, LUELLA *Psychology of Adolescence* New York Farrar and Rinehart, Inc., 1936. Pp. xvi + 503.

A readable presentation of the many-sided development of adolescence, illustrated by many brief case studies and anecdotes

COYLE, GRACE LONGWELL *Studies in Group Behavior*. New York Association Press, 1937 Pp x + 258

A realistic account of five club groups in a social settlement in a foreign section of an American city with special implications for the group leader.

DAVIS, MAXINE. *The Lost Generation* A Portrait of American Youth Today. New York: The Macmillan Company, 1936. Pp xii + 385.

A collection of vivid anecdotes collected by means of observation and interviews with a sampling of youth in many parts of the United States.

DOUGLASS, H. R. *Secondary Education for Youth in Modern America*. Washington, D. C. American Council on Education, 1937

A report to the American Youth Commission of the American Council on Education bringing to bear a mass of information and opinion on the needs of high-school students

HOLLINGWORTH, LETA S. *The Psychology of the Adolescent*. New York: D. Appleton and Company, 1928 Pp xiii + 259

A most valuable book on adolescent problems, written so simply that students, parents, and teachers will enjoy reading it as well as profit by it.

HOPPOCK, ROBERT "Vocational Guidance—A Five-Foot Shelf," *Occupations*, XV (November, 1936), 132-136

A list of 64 selected references on vocational guidance.

JUDD, CHARLES HUBBARD *Psychology of Secondary Education* Boston: Ginn and Company, 1927. Pp ix + 545

"An analysis of the mental processes which pupils exhibit in studying particular high-school subjects." This analysis is made in a setting of secondary education and the psychology and sociology of adolescents.

KITSON, HARRY D. *I Find My Vocation* (revised edition). New York: McGraw-Hill Book Company, Inc., 1937. Pp xvi + 227

A stimulus to young adolescents to study the world of work and their place in it

KNOEBBER, SISTER MARY M. *Self-Revelation of the Adolescent Girl*. New York: Bruce Publishing Company, 1936 Pp xiii + 206.

An analysis of the attitudes, ideals, and problems of certain groups of adolescent girls from the point of view of the girl herself

652 AN INTRODUCTION TO CHILD STUDY

KUNKEL, FRITZ. *What It Means to Grow Up*. Translated from the German by Barbara Keppel-Compton and Hilda Niebuhr. New York: Charles Scribner's Sons, 1936. Pp xi + 180.

A translation of a well-known German book showing considerable insight into adolescent development.

LATON, ANITA D., and HARWELL, EMMA J. "Health Aspects of Guidance," *University High School Journal*, XIII (December, 1934), 212-221

A description and discussion of a specific high-school health program, with special emphasis on the guidance aspects.

MCCALLISTER, JAMES M. *Remedial and Corrective Instruction in Reading*. New York: D Appleton-Century Company, 1936. Pp xviii + 300

A valuable book on the theory and practice of reading in junior and senior high school

O'NEILL, EUGENE. *Ah Wilderness*. New York: Random House, 1933. Pp 159

Adolescent problems in dramatic form.

PLANT, JAMES. *Personality and the Cultural Pattern*. New York: The Commonwealth Fund, 1937. Pp. x + 432

An interestingly written emphasis on the contribution of our social institutions to personality development

SHAFFER, LAWRENCE F. *The Psychology of Adjustment*. An Objective Approach to Mental Hygiene. Boston: Houghton Mifflin Co., 1936. Pp xix + 600.

An objective approach to the study of adjustment, including a discussion of psychological foundations, varieties of adjustive behavior, personality and techniques of mental hygiene.

STRANG, RUTH. *Behavior and Background of Students in College and Secondary School*. New York: Harper and Brothers, 1937. Pp. xiv + 515.

The results of investigations relating to adolescent problems, physical characteristics, intelligence, achievement, personality, attitudes, interests, social and economic background and expenditure of time and money.

TERMAN, LEWIS M., MILES, C. C., and others. *Sex and Personality: Studies in Masculinity and Femininity*. New York: McGraw-Hill Book Company, Inc., 1936. Pp xi + 600.

A summary of investigations of psychological differences between the sexes, including case studies of homosexual males and delinquent girls.

WILLIAMS, FRANKWOOD E. "Confronting the World. The Adjustments of Later Adolescence," *Intelligent Parenthood*, pp. 195-214 Chicago, Illinois: The University of Chicago Press, 1926.

A stimulating, provocative presentation of two important problems of adolescence. emancipation from the family and development of heterosexuality.

WOODRING, MAXIE N., and FLEMING, CECILE WHITE *Directing Study of High School Pupils* (revised and enlarged edition). New York: Teachers College, Columbia University, 1935. Pp. vi + 253.

A summary of investigations, including many practical suggestions for improving study habits.

YOUNG, PAULINE V. *Interviewing in Social Work; A Sociological Analysis*. New York: McGraw-Hill Book Company, Inc., 1935 Pp. xvi + 416

A comprehensive treatment of the technic of interviewing, illustrated by many examples of interviews which also give insight into problems of family relationship.

APPENDIX

APPENDIX I

TABLE VIII
HEIGHT-WEIGHT FIGURES FOR THE FIRST YEAR ¹

HEIGHT IN INCHES	WEIGHT IN POUNDS									
	1 Month		3 Months		6 Months		9 Months		12 Months	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
20	8	8								
21	9	9	10	10						
22	10	10	11	11						
23	11	11	12	12	13	13				
24	12	12	13	13	14	14		14		
25	13	13	14	14	15	15	16	15		
26			15	15	17	16	17	17	18	17
27			16	16	18	17	18	18	19	18
28					19	19	19	19	20	19
29					20	19	21	20	21	20
30					22	21	22	21	22	21
31							23	22	23	22
32							24		24	23
33									26	

¹ These figures are from the "Tables for Infancy and Early Childhood" prepared by Robert M. Woodbury. They are published in *Children's Bureau Publication, No. 87*, and in the "Weight-Height-Age Tables," supplement to the July, 1923, issue of *Mother and Child*, American Child Health Association. The weights in this table do not include clothing.

TABLE IX
HEIGHT-WEIGHT FIGURES FOR CHILDREN IN THE SECOND YEAR¹

HEIGHT IN INCHES	WEIGHT IN POUNDS			
	18 Months		24 Months	
	Boys	Girls	Boys	Girls
28	20	19		
29	21	20		
30	22	21	22	21
31	23	23	23	23
32	24	24	25	24
33	26	25	26	25
34	27	26	27	26
35	29	29	29	29
36			30	30
37			32	31

¹ These figures are adapted from the "Tables for Infancy and Early Childhood" prepared by Robert M. Woodbury. They are published in *Children's Bureau Publication, No. 87*. Up to and including a height of 34 inches, all the weights given are without clothing. To the weights of children above 34 inches the following additions for clothing were made:

	Boys	Girls
35-39 inches	1¾ pounds	1 pound
40-44 inches	1½ pounds	1½ pounds
45-49 inches	1¾ pounds	1¾ pounds

See also Helen B. Pryor, *Width-Weight Tables for Boys and Girls, 1-16 Years, and Men and Women, 17-24 Years*. Palo Alto, California: Stanford University Press.

Parents should keep a simple record of a child's weight month by month. The child should always be weighed at the same time of day, either without clothing or with clothing which does not vary in amount.

TABLE X
HEIGHT-WEIGHT FIGURES FOR CHILDREN SIX TO EIGHT YEARS OF AGE ¹

HEIGHT IN INCHES	WEIGHT IN POUNDS					
	Six Years		Seven Years		Eight Years	
	Boys	Girls	Boys	Girls	Boys	Girls
38	34	33				
39	35	34				
40	36	36		36		
41	38	37	38	37		
42	39	39	39	39	39	
43	41	41	41	41	41	41
44	44	42	44	42	44	42
45	46	45	46	45	46	45
46	48	47	48	47	48	48
47	50	50	50	50	50	50
48	52	52	53	52	53	52
49	55	54	55	54	55	55
50	57	56	58	56	58	57
51			61	59	61	60
52			63	63	64	64
53			66	66	67	67
54					70	69
55					72	72
56					75	

¹ Arranged from the *Weight-Height-Age Tables for Boys and Girls of School Age*, Bird T Baldwin and Thomas D Wood Adapted by permission of Dr Thomas D. Wood

TABLE XI
HEIGHT-WEIGHT FIGURES FOR CHILDREN NINE TO TWELVE YEARS OF AGE ¹

HEIGHT IN INCHES	WEIGHT IN POUNDS							
	Nine Years		Ten Years		Eleven Years		Twelve Years	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
45	46	45						
46	48	48						
47	50	50	50	50				
48	53	52	53	53		53		
49	55	55	55	56	55	56		
50	58	58	58	59	58	61	58	62
51	61	61	61	61	61	63	61	65
52	64	64	64	64	64	65	64	67
53	67	67	67	68	67	68	68	69
54	70	70	70	70	70	71	71	71
55	72	74	73	74	73	74	74	75
56	76	76	77	78	77	78	77	79
57	79	80	80	82	81	82	81	82
58	83		84	84	84	86	85	86
59			87	87	88	90	89	90
60			91	91	92	95	92	95
61					95	99	96	100
62					100	104	101	105
63					105		106	110
64							109	114
65							114	118

¹ Arranged from the *Weight-Height-Age Table for Boys and Girls of School Age*, Bird T Baldwin and Thomas D Wood. Quoted by permission of Dr Wood.

APPENDIX II

SUMMARY OF PLAY MATERIALS FOR CHILDREN¹

Birth to Six Months

Sterilizable toys.—Remove all removable parts, as rings on rattles, whistle openings. Be sure that the paint will not wash off, and that it has no lead in it to poison the baby. Beware of points or anything to jab the baby's eyes or mouth. Suitable toys are rubber balls large enough not to be swallowed, bright toys, especially red, with some yellow, cuddly dolls.

Suspend toys above the baby's chest so that he can bat them around and look at them without acquiring bad eye habits.

Six Months to a Year

Tie strings to his toys so he can pull them back when he throws them away. Continue to avoid toys with non-washable paint and sharp points. Everything should be sterilizable. Suitable toys are: rubber sponge dolls and toys when he can be guarded against chewing them or choking on them, blocks, too large to be swallowed; sturdy rattles, bright cloth toys, sturdy, with no removable parts, simple bright put-and-take toys, as nests of boxes, with smaller bits to put in and take out; boxes and jars with tops to screw and put on; balls.

Toys now are chiefly of value for increasing the child's interest in things for which to reach and for him to manipulate.

One to Two Years

All toys must still be sterilizable, and free from non-washable paint and sharp points. Be sure the child has no lead toys. Tin is dangerous. Suitable play materials are bright-colored balls, push-and-pull sturdy toys, simple hammering outfits, large boxes that won't tip over for building, blocks for building, table and chairs, sturdy, seat 12 inches from the floor, simple cupboards or large boxes for toys; cuddly dolls and toys; toys for finer put-and-take games; rubber sponge toys when supervised; boxes, with covers to fit on.

If possible, see that the child does not learn to tear things to pieces. Mend all broken parts immediately, or discard broken toys.

¹ Prepared by Dr. Katherine B. Greene.

Two and Three Years

By now, a well-trained baby does not put things in his mouth, but paint, sticks, lead, tin and mechanical toys should still be watched. See that his toys are so sturdy that they are hard to break. No cheap mechanical toys. Suitable play materials are: balls; rope; blocks, boxes to build heavy structures; push-and-pull toys; climbing ladders or jungle-gym, sand or gravel pit; swings, Kiddie Kars and wagons; scissors, crayons, large, paint, clay, when supervised, boxes with tops to fit on and things to drop in; dolls, all kinds but breakable; squares of cloth, 15 inches square, large beads; hammering outfits; table and chairs, cupboards, shelves, boxes, for toys; water toys; sturdy, simple picture books containing bright colors or photographs.

Sturdy, wooden containers for toy sets, as beads, blocks, etc., are invaluable in keeping materials sorted.

Four and Five Years

Watch out for easily broken toys, for poor paint, lead, sticks, tin and mechanical toys. Suitable play materials are: balls, rope; blocks; heavy boxes, push-and-pull toys; climbing ladders, or jungle-gym, swings, see-saw with non-pinching support, tricycles, wagons; trapeze; planks for building and for balancing in walking; sand or gravel pit; scissors, crayons, paint, clay, complex blocks, paper, paste, when supervised, boxes with tops to fit on and things to drop in; dolls — clothes, house, carriage, furniture, squares of cloth, 15 inches square; sturdy books; bean bags; large beads; hammering outfits, more complex; simple form boards, and cut-up puzzles; tables and chairs; cupboards, shelves, boxes, for toys, sturdy wooden containers for sets of material; water toys, sturdy, simple picture books — bright colors or photographs.

The push-and-pull toys, boxes with tops to fit on, sturdy books, and simple form boards begin to drop out of the interest range of five-year-olds. They are interested in more complex puzzles, pets that require a simple kind of care, materials to build more complex structures, and simple carpentry to make objects for more permanent use. Excursions to stores, fire stations, factories, train stations, lakes, hills, tunnels, bridges, and other rather unfamiliar spots are now needed. Supervision of much of the paint, clay, etc., can be relaxed, but still is needed at intervals.

This seems to be a period when the child adds little new to his needs, but reorganizes in more complex patterns what he can already do. It is true that even at this age children tend to tire of toys that can be made to do just one thing well, mechanical toys, precious dolls to be held carefully, not undressed, etc.

Six and Seven Years

Watch out for easily broken toys, for poor paint, lead, sticks, tin and mechanical toys. In addition to the play materials listed for five-year-olds, children of six years of age enjoy books of familiar and unfamiliar experiences. Whimsy and humor may be used cautiously. Simply told stories that the child may "read" may help him to learn what is the reading process. They also like pictures to put on the walls. Occasionally children can learn to use sturdy toys driven by wound springs or electricity. These are still chiefly for adult pleasure, however. Equipment for store and other occupations and simple puppet equipment are also enjoyed.

Excursions to stores, fire stations, factories, train stations, lakes, hills, tunnels, bridges, and other rather unfamiliar spots are now needed. Supervision of much of the paint, clay, etc., can be relaxed, but still is needed at intervals.

Singing, telling stories, and telling of daily happenings are now very enjoyable.

Children seven years old occasionally can learn to use sturdy toys driven by wound springs or electricity. These are still chiefly for adult pleasure, however. They enjoy: equipment for store and other occupations; simple puppet equipment; sewing, large size, simple games with cards, counting units, and chips, as flinch, old maid, slap, parchesi, dominoes, tiddledy-winks.

At this time, materials used earlier are still attractive but are not used so frequently. Structures are built to be used for more than one period, and activities may last as long as a week.

Eight to Eleven Years

Children of these ages enjoy a large variety of play material: balls, rope, blocks; heavy boxes; climbing ladders; swings; see-saw, tricycles, wagons, bicycles if safe in traffic, trapezes, sand or gravel pit, planks, scissors, crayons; paint, clay, paper, paste dolls — clothes, house, carriage, furniture, bean bags; tables and chairs; cupboards, shelves, boxes, for toys; sturdy wooden containers for sets of material, books, pictures to put on the walls; more complex puzzles, pets, materials to build more complex structures, as blocks that can be joined by pegs, rods, etc., and Lincoln logs; children can learn to use sturdy toys driven by wound springs or electricity; equipment for store and other occupations, simple puppet equipment, sewing; games with cards, counting units, and chips as flinch, old maid, slap, parchesi, dominoes, tiddledy-winks; more complex games as cribbage, card playing in various forms, jackstraws; good game outfits, as tennis, baseball, rowing, swimming suits, skates, and bicycles; good equipment for music, sewing, tap dancing, carpentry, art work, stamp collecting, and other individual

interests, books of many kinds are recommended for this age, especially stories of other children, in many circumstances, travel, adventure, simple science and occupational stories, and some fairy and humor stories.

Materials are frequently lost or outgrown during this period so that casualties must be expected even with these more permanent recreational materials.

At this time, pursuits become more social in nature. All the materials heretofore used are still enjoyed, but they are woven into games, or dramatic situations as pirates, home play. Skills become more important, as in tennis, shinny, skating, and in art work, carpentry, sewing, where the activity may be carried on in order to enjoy the product.

Twelve to Fourteen Years

During this period we have an intensification of some of the earlier interests, with an occasional advance into adolescent interests: balls; rope, climbing ladders; swings, see-saw with non-pinching support; bicycles, if fairly safe in traffic, scissors, crayons, paint, clay, paper, paste, when supervised; dolls—clothes, house, carriage, furniture, bean bags; tables and chairs; cupboards, shelves, boxes, for toys, sturdy wooden containers for sets of material; pictures to put on the walls; more complex puzzles; pets; materials to build more complex structures, as blocks that can be joined by pegs, rods, etc., Lincoln logs, mechano sets; carpentry to make objects for permanent use, toys driven by wound springs or electricity, equipment for store and other occupations; simple puppet equipment, sewing, games with cards, counting units, and chips, as flinch, old maid, slap, parchesi, dominoes, tiddledy-winks; more complex games as cribbage, card playing in various forms, jackstraws; good game outfits, as tennis, baseball, rowing, swimming suits, skates, and bicycles; good equipment for music, sewing, tap dancing, carpentry, art work, stamp collecting, and other individual interests; books of many kinds are recommended for this age, especially stories of other children, in many circumstances, travel, adventure simple science and occupational stories, and some fairy and humor stories. More specialized interests may be furthered by source books

Materials are frequently lost or outgrown during this period so that casualties must be expected even with these more permanent recreational materials.

At this time, pursuits become more social in nature. All the materials heretofore used are still enjoyed, but they are woven into games, or dramatic situations as pirates, home play. Skills become more important, as in tennis, shinny, skating, and in art work, carpentry, sewing, where the activity may be carried on in order to enjoy the product.

Display — Better game outfits, social dancing clothes, personal care and adornment gifts

Fifteen to Eighteen Years

During this period normal youths are much affected by what the others of their age are doing. There may be an exaggerated desire to appear in the latest style, master fashionable current games and sports, and in general to be outstanding in all popular activities. Thus gifts and play equipment had best be made to further the prestige of the individual in his own group by presenting whatever is wanted to make the youth as much an adult as is wise. This means selection of all play equipment and personal adornment items on a basis of group approval, from long trousers and silk stockings to elaborate chemical outfits and embroidery materials.

Specialized interests may call for elaborate equipment characteristic of our age, as automobiles, motor boats.

Equipment for games of motor skill, mental skill, and chance, with a large social element, are needed now.

INDEX OF SUBJECTS

- Absence from school, 378-379
- Accidents, prevention of *See* Safety
- Achievement, scholastic, 599-604
- Achievement tests,
 - for adolescents, 598-599
 - for grades four to nine, 548-553
 - for primary children, 411-416
- Acquired characteristics, inheritance of, 27-28
- Adjustment,
 - factors in, 368, 509-512, 643-644
 - process of, 560-564
 - to health needs, 591-592
- Adolescence, 583 ff.
- Adolescents,
 - education of gifted, 595-596
 - education of non-academic, 596-597
 - guidance of, 583
 - individuality of, 583-585
- Aggressive behavior, 181-182
- Anaemia, 54
- Analysis of children's work, 404
- Anger,
 - causes of, 73-74, 187-188, 392-393
 - control of, 114, 393-395, 531-533
 - manifestations of, 73-74
 - prevention of, 112-114, 393-395
- Annoyance, 362-363
- Appetite, lack of, 383-384, 441
- Arithmetic,
 - achievement at later preschool period, 178-179
 - at preadolescent period, 468-470
 - at primary period, 317-318
 - at two years, 90
 - diagnosis of difficulties, 360-361, 498
 - steps in learning, 289
 - suggestions for learning, 358-362, 497-500
 - tests, 414-415
- Attention,
 - lack of, 519-520
 - relation to learning, 335
 - span of, 172, 322
- Attitudes,
 - of children, 480, 640-641
 - of mother, 137
 - of parents, 206, 236, 508, 511, 559-560, 637-638
 - of teachers, 509, 511-512, 638-640
 - teaching of, 477
- Ayers Handwriting Scale, 341
- Baby at birth, 11-23
- Backward children *See* Retarded children
- Ball, playing, 298
- Behavior,
 - complexity of, 3
 - sequences of, 3, 86-90
- Bilingualism, 308-309
- Birthmarks, 35
- Bladder control, 127-129
- Blindness, prevention of, 13
- Books,
 - for latter preschool years, 220-222
 - preadolescent period, 463-467
 - primary period, 348-349, 351-355
- Bowel control, 129-130
- Brain, 319
- Breakfast, 383, 385
- Bright children,
 - adjustment of, 476
 - education of, 537, 595-596
 - identification of, 535-537
- Broken home, significance of, 558-559, 644
- Calcium, 120, 124, 384
- Case conference, 591-592
- Case history, 367-368, 554, 645-646
- Character analysis, 406
- Character development, 620-622

- Cheating, 526-528
 Child,
 oldest, 249-251
 only, 249-251, 264
 Childhood, periods of, 5-7
 Child Study Association, 42, 576
 Clinics, psychiatric and psychological, 570
 Clothing, for the baby, 21
 Cod-liver oil, 38, 121
 Collecting, 449-450
 Colors, identification of, 178
 Companions, 78, 203-204
 Competition, 479
 Composition, written, 310-312, 458
 Concepts, children's, 167-168, 178-179
 Conditioned reaction, 109
 Constructive activity, 299-300
 Conversation, 164
 Co-operation,
 in games, 445
 on part of child, 479
 Creative activities, 310-311, 458, 642
 Creeping, 56-58
 Criticism, 326
 Crying, 14, 77, 184-185, 237-238
 Culture,
 effect of on adolescents, 607
 on prenatal development, 83
 on preschool children, 83-84
 Curriculum, 483, 612-614

 Daily schedule for the family, 252-261
 Daydreaming, significance of, 560
 Deceit *See* Lying
 Defects *See* Physical
 Delinquency,
 associated with school maladjustment, 597
 juvenile, 621
 Dementia praecox, 610
 Development,
 factors in, 37-38
 stages of, 5-7, 57
 See Growth
 Diagnosis, through creative work, 549

 Diet,
 during first two years, 124-125
 later preschool years, 155-156, 261-263
 pregnancy, 38
 Dionne quintuplets, 35, 131-132, 145-146
 Diphtheria, 125-126, 296, 418
 Discipline,
 in securing obedience, 608-609, 515
 kinds of, 381-383
 purpose of, 381, 512
 relation of to personality, 193
 Diseases,
 inheritance of, 26
 prevention of, 120-125, 296-297, 387-389, 442
 Disobedience, 246-249, 515, 608
 Disuse, method of, 110-111
 Doll play, 99, 298, 445-446
 Dramatization, 175
 Drawing, 303-306, 343-345, 451-453, 491-493
 Dreams, 177-178, 323-324
 Dressing,
 co-operation in, 104
 learning in, 105-106, 161
 the baby, 21
 Dull children *See* Retarded children

 Eating,
 daily habits of, 130-131, 243-246, 386-387
 of breakfast, 383, 385
 regularity in, 130
 suitable food, 384-385
 Education, function of, 571
 Educational Records Bureau, 554
 Emancipation from parents, 609-610
 Emotional behavior,
 effect on learning, 108
 in the adolescent period, 604-610
 in the first two years, 72-77, 108-118
 in the later preschool years, 187-192
 in the preadolescent period, 480-481, 530-533

- Emotional behavior (*Cont*)
in the primary period, 365-367, 389-397
methods of studying, 544
physiological effect of, 72
Energy requirement, 155-156
Enuresis, 128-129, 241
Environment,
control of in the first two years, -97-99, 102, 115-116
guidance through the, 635-637
observation of, 275-276, 405-406
relation to development, 83-85, 115-116
relation to discipline, 516
relation to emotion, 113
relation to heredity, 28-31
relation to intelligence, 154, 594
relation to learning, 96, 199-206
relation to obedience, 100-101
relation to play, 336-337, 446-447
relation to speaking, 68, 106, 216
Eugenics, 30
Euthenics, 31
Exceptional children *See* Bright children and Dull children
Experiences, relation to learning, 208-210
Failure, in academic work, 318-319, 510-511, 600-603
Falsehood *See* Lying
Family relationships, 79, 190, 250, 252-254, 276-277, 329-330, 481, 563-564, 606, 607, 637-638
Father, relationship of child with, 79, 253-254
Fear,
causes of, 74-75, 188-189, 389-391
elimination of fears, 100-112, 189-190, 225-228, 531
irrational, 391
manifestations of, 74-75, 189-190
of animals, 109, 189
of dark, 188, 226-228
of punishment, 110, 391, 524
prevention of fears, 110-112 390-391
Feeble-mindedness, growth of, 292
Field trips, 489
Fighting, 528-529
Foetus, 36-37
Food,
for baby, 121, 124-125
for expectant mother, 38
later preschool period, 261-263
primary period, 384-386
refusal of, 245
Food fads,
prevention of, 243-244
Friendship,
in adolescence, 619-620
in preschool years, 182-183
Gain in height and weight *See* Growth
Games, 297-299, 442, 444-448
Gangs, 478-479
Goals, 502-503
Growth,
deviations in, 440-441, 589
educational implications of, 590-592
in the adolescent period, 587-592
in the first two years, 50-52
later preschool years, 153-156
preadolescent period, 437-442
primary period, 289-292
significance of, 557-558
Guidance,
administrators' contribution to, 565
in learning, 204-206, 230-233, 485
in rural schools, 562
in-service education of teacher for, 568-569
need of, 4
of adolescents, 634-646
of mother, 145
of preadolescents, 556, 560-570
of preschool children, 145-146
processes of, 541-545
self, 646
task of, 541
teachers' contribution to, 566-569
through change in environment, 564
through health examination, 563
through sharing responsibility, 563

- Habits,
 bad, elimination of, 213-215
 flexibility of, 506-507
 relation to satisfaction, 212-213
- Hand preference, 61-62
- Hand to mouth reaction, 60
- Handwriting. *See* Writing
- Harvard Growth Study, 547
- Headaches, 441
- Health,
 examination, 269-270, 417-418, 592
 habits, 184, 326-327, 420-421
 problems, 383-388
 program, 388-389
 relation to adjustment, 509-510
- Hearing, in infant, 18-19
- Height *See* Growth
- Height-weight tables, 155, 438, 657-660
- Helpfulness, of children, 60-61, 161-162, 254-255
- Heredity, influence of, 24-33, 643
- Heterosexuality, development of, 615-618
- Home environment, 275-277
- Honesty. *See* Cheating
- Humor, 468
- Imagery, 177
- Imagination,
 in the later preschool years, 175-177
 in primary years, 322-323
- Immunity *See* Disease prevention
- Independence, development of, 396-397, 609-610
- Individual differences, 16, 19, 67, 85, 186-187, 190, 334-335, 370-371, 463
- Instruction, 484-485
- Intelligence,
 classification on basis of, 488-489
 effect on learning of, 207
 relation to environment, 175, 321
 relation to schooling, 174, 321
 results of research on, 545, 547-548
 tests of,
 for adolescents, 597-598
 for grades four to nine, 546
- Intelligence (*Cont*)
 for preadolescents, 545-546
 for preschool children, 80-82, 174-175, 270-273
 for primary children, 406-411
- Intelligence quotient (I Q), 319-321, 409
- Intelligent behavior, 80
- Interest, questionnaires, 543-544
- Interests,
 development of, 478
 in play *See* Play
- Interviews, 404-405, 542-543
- Jealousy, 75-76, 192, 481, 533
- Kindergarten, activity in, 300-302
- Kuhlmann-Anderson Intelligence Tests, 546
- Language,
 development of, 66-69, 163-167, 306-312, 453-460
 errors, 310, 357, 454, 456
 learning the, 106-108, 215-218, 355-358, 493-495
 special abilities in, 69
 variation in ability, 68
- Laughing, 69-70, 184-185
- Leadership, 480
- Learning,
 assistance of mother in, 115-118
 conditions of effective, 95-96
 curves, 334
 factors in, 199, 483-486
 illustration of, 502-506
 in the first two years, 93-118
 in the later preschool period, 195-196, 199-234
 in the preadolescent period, 483-507
 in the primary period, 333-364
 steps in, 266-267
- Left-handedness, 240-241
- Lies *See* Lying
- Love,
 in adolescent period, 606
 in later preschool period, 190
 in preadolescent period, 481
 in primary period, 395-396

- Lunch, at school, 386
 Lying,
 causes of, 376, 523-525
 treatment of, 377, 525-526
- Maladjustment, 366-367, 610, 629, 630-634
- Malnutrition *See* Nutrition
- Marriage and parenthood, education for, 618-619
- Masturbation, 240, 396, 518-519
- Maturation, 93
- Maturity, importance of, 132
 in adolescence, 586-628
- Memory,
 in the first two years, 70-72
 in the later preschool years, 172-173, 223-224
 in the preadolescent period, 473-474
 in the primary period, 321-322
- Mental age, 409
- Mental growth,
 curves of, 592-593
 fluctuations in, 593-594
 in preadolescent years, 471-474
 in preschool years, 167-176
 in primary years, 319-322
- Mental mechanisms, 191
- Mental tests *See* Intelligence tests
- Mid-morning lunch, 385
- Milk,
 amount, 124
 in menu, 124, 262
 values of, 124-125
- Moral judgment, 325-326, 476-477
- Mother, hygiene of, 38-39
- Motor ability of children,
 at birth, 14-16
 effect of training on, 63-64, 207
 first two years, 55-65
 later preschool years, 158-161
 measures of, 273
 preadolescent period, 443-449
 primary period, 297-299, 335-337
 relation to mental abilities, 63
 relation to writing and drawing, 289
 significance of, 557-558
- Motives, in learning, 212-213, 502-503
- Musical ability, 178, 538
- Nagging, 236-237, 514
- National Intelligence Test, 546
- Negativism, 134-137, 516
- Nervousness, 369-374
- Non-academic children *See* Retarded children
- Number *See* Arithmetic
- Nursery schools, 194-197, 232-233, 273-274
- Nutrition, of child, 293-294, 419
- Obedience,
 concepts of, 248-249
 how to secure, 248
 influence of parental attitudes on, 247-248
 nature of, 249
- Observation,
 by parents, 143-145, 266
 by teachers, 403-404, 542
 characteristics of scientific, 139-141, 264
 in child study, 141-145, 264-265, 400-404
 of interests, 268
- Over-age children, 377-378 *See* Retarded children
- Ownership, 242 *See* Property rights
- Parents,
 over-solicitous, 390-511
 relation to child, 329-330
- Personality,
 development of,
 in adolescence, 628-629
 in preschool period, 192-194
 genesis of, 16-17
 relation of learning to, 229-230
- Phantasy *See* Daydreaming
- Physical activity of newborn, 14-16
 value of, 337
- Physical care of baby, 21-22
- Physical characteristics
 inheritance of, 24-26
 of baby at birth, 12-13

- Physical condition,
 examination of, 291, 417-419
 relation to emotional behavior, 76,
 112, 114
 relation to learning, 207-208,
 210
 relation to mental development,
 439-440
- Physical defects,
 at birth, 13-14
 first two years, 53-54
 primary period, 294-295
- Physical development *See* Growth
- Physical maturity, 587-592
- Physiological maturity, 586-587
- Picking up objects, 102
- Play,
 guidance through, 642
 of child in second year, 78
 of preadolescent children, 444-449,
 479
 of preschool children, 162-163
 of primary children, 297-299
 value of, 448
- Play materials,
 for first two years, 98-100, 661
 later preschool years, 160, 195,
 200-203, 662
 preadolescent and adolescent years,
 663-664
 primary period, 336-337, 663
- Playmates *See* Companions
- Poetry, learning of, 490
- Porteus' Mazes, 408
- Posture, 419-420
- Premature infant, 13, 62
- Prenatal,
 development, 34-39
 influences, 34-35
 period, length of, 35-36
- Problems,
 complexity of, 538-539
 defined, 120, 365
 relation to normal development,
 235
 study of, 508-509
- Property rights, respect for, 78, 184,
 187
- Psychoanalysis, 642-643
- Psychoses in childhood, 366
- Punishment,
 dangers of, 382, 513
 examples of, 367-368
 purpose of, 381
 types of, 382, 512-514
- Questions asked by children, 164-165
 value of, 217-218
- Rage *See* Anger
- Random movements, 15
- Rating scales, 268-269, 405-406
- Reactions, present at birth, 14-16
- Reading,
 ability, 312-317, 460-463, 599-
 600
 habits, 316, 461-462, 467
 interests, 316-317, 351, 463-464
 methods of teaching, 346-351, 493-
 495
 oral, 350-351, 462
 readiness, 313, 345-346
 silent, 462
 steps in learning to read, 289, 345-
 348
 tests, 414-415
 time allotment for, 351
- Reasoning,
 in the later preschool years, 168-
 171, 222-223
 in the preadolescent years, 472
 in the primary years, 324-325
- Re-conditioning, 109
- Records,
 cumulative, 554-557, 645-646
 of behavior, 85-90, 143-144
 of vocabulary, 90-91
 use of, 277-278
- Reflexes, at birth, 15
- Religious development, 622-623
- Remedial work, 487, 603-604
- Reports to parents, 556-557
- Research methods, 139-140
- Retarded children,
 education of, 596-597, 534-535
 identification of, 475, 533
- Rickets, 120-125
- Rorschach Ink-Blot Test, 272-273,
 404
- Running away, 243

- Safety, 297, 442-443
Satisfaction, effect on learning, 362-363
Schedule *See* Daily schedule
Sensations,
 in newborn, 17-21
 in prenatal period, 36
Sentences,
 ability to use, 68
 length of, 68, 163, 309
Sex,
 child's interest in, 191-192
 differences, 629-630
 education, 517-518
 books on, 576, 578
 "Showing off," 237
Shyness, 390-391, 481, 558, 560
Sight, presence in infant, 17-18
Sims Score Card, 405
Skill,
 acquiring, 485-486
 guidance through, 641
Slang, 456-457
Sleep,
 amount recommended at different
 ages, 20, 54-55, 157-158
 conditions favorable for, 132
 disturbance of, 131
 regularity of, 131
Smiling *See* Laughing
Smoking, 528
Social behavior,
 conventions, 183
 development of, 77-80, 179-187,
 224-225, 328-331, 478-481, 500,
 611-620
 education, in high school and col-
 lege, 612-618
 maturity scale, 549
 needs of adolescents, 614-615
 sciences, 470-471
 sensitivity, 181, 611-612
 service, 614
Specialists, in child guidance, 569-570
Speech *See* Language
Spelling, 458-460, 495-497
Stanford-Binet Test, 69, 270, 407,
 545, 547
Stealing, 520-523
Stories,
 for preschool children, 218-222
 interest in, 218-219
Study,
 of adolescents, 644-645
 of baby, 139-146
 of nervous children, 2, 373-374
 of primary children, 399-422, 416-417
Study habits, 500-501, 599, 631-632
Stuttering, 374-376, 530
Sun baths, 122
Sunlight, 123-124
Superior children *See* Bright chil-
 dren
Superstitious beliefs, 478-479
Swearing, 457-458
Table manners, 183
Talking *See* Language
Tardiness, 379-381
Taste, in infant, 19
Teachers,
 education of, 569
 pupil relationships to, 330-331,
 395, 638-640
Teeth, 52-53, 156, 292-293
Teething, 126
Temper tantrums, 238-240
Tests *See* Achievement, Intelligence,
 Motor ability
Theft *See* Stealing
Thematic Apperception Test, 549
Thinking. *See* Reasoning
Thumb-sucking, 132-134
Toys,
 interest in, 200-201
 kind of, 200
 putting away, 196
Truancy *See* Absence
Tuberculosis, prevention of, 442
Ultra-violet rays, 121-124, 145
Underweight *See* Nutrition
Vision,
 growth in, 65
 protection of, 387
Vitamins 293-294, 384-385

- Vocabulary,
 at one year, 66-67
 in preadolescent period, 454-456
 lists, 307, 494
 means of increasing, 107-108
 primary period, 306-309
 test of, 455
 three to six years, 166-167
 two years, 67-68
 wide range of, 306
Vocational guidance, 623-628
- Walking,
 assistance in learning, 97
 sequence in learning, 56-59, 88-89
Weaning, 126-127
- Weight *See* Growth
White House Conference, 638
Words,
 first spoken, 66-67, 89-90
 See Vocabulary and Language
Writing,
 interest in, 302-303, 450
 manuscript and print writing, 342-343
 methods of teaching, 303, 338-342, 490-491
 readiness for, 338
 scale, 341
 standards of speed and legibility, 303, 342-343, 450-451
X-ray pictures, 588-589

INDEX OF NAMES

- Abernethy, Ethel Mary, 439, 587, 594
 Adler, Alfred, 6, 229
 Aichhorn, August, 649
 Aldrich, Charles Anderson, 246
 Alexander, F Matthias, 575
 Allin, K D, 185
 Allport, Gordon, 649
 Almack, J C, quoted, 497
 Anderson, Harold H, 212, 509
 Anderson, John E, 147, 177, 428,
 quoted, 144, 178
 Andrus, Ruth, 428
 Appel, K E, 649
 Arlitt, Ada Hart, 650
 Armstrong, Edna M, 104
 Asch, S E, 474
 Asher, E J, 547
 Atkin, S, 459
 Ayer, Mary Ellen, 193
 Ayres, Leonard P, 340

 Bailey, Edna W., 575
 Bain, Read, 67
 Bain, Winifred E, 429
 Baker, Harry J, 406
 Bannerman, Helen, 221
 Barthelmess, Harriet M, 489
 Baur, Erwin, 27
 Bayley, Nancy, 82, 146, 147, 155,
 quoted, 63
 Beatty, W. W, 303
 Benedict, Agnes E, 575
 Benedict, Ruth, 83
 Bennett, Arnold, quoted, 515
 Benson, W. T., 389
 Bentley, John Edward, 429
 Bergman, E O, 579
 Berne, E V, 187, 429
 Bernreuter, Robert G, 193
 Beskow, Elsa, 220, 221
 Bienstock, S F, 159
 Bigelow, Maurice A., 518, 650
 Bishop, Elizabeth L, 575

 Blanchard, Phyllis, 430
 Blanton, Margaret Gray, quoted,
 107
 Blanton, Smiley, quoted, 107
 Blatz, William Ernest, 55, 73, 129,
 131, 147, 185, 235, 282, quoted,
 120, 128, 132
 Bleyer, Adrien, 128
 Boggess, Virginia, 560
 Bonar, B E, 148
 Bond, Guy L, 313, 314, 345
 Book, William F, 496
 Borgeson, Gertrude, 244, 262, 284
 Bott, E A, 55
 Bott, Helen, 55, 147, 265, 282
 Boyer, Philip A, 489
 Boynton, Bernice, 650
 Brace, David K, 444
 Brackett, Catherine W, 185
 Brandenburg, George C, 355
 Brann, Esther, 220
 Breckenridge, Marian E, 274
 Breed, Frederick S, 459, 495, 575
 Brennemann, Joseph, 42, 389
 Breslich, Ernst R, 650
 Bridges, Katherine M B, quoted,
 63, 74
 Briggs, Thomas H, 650, quoted, 595
 Bronner, Augusta, 621
 Brooks, Fowler D, 94, 593
 Brown, Marion, 644, 650
 Brownell, W A, 359
 Brueckner, L J, 317, 400, 498
 Bruner, 317
 Bryngelson, Bryng, 530
 Buhler, Charlotte, 71, 147, 193
 Bunting, Russell W, 53
 Burks, Barbara Stoddard, 331, 478,
 498, 535, 536, 537, quoted, 194,
 326
 Burn, Mathew, 125
 Burnham, William H, 575
 Burr, Marvin U., 489

- Burt, Cyril, 576
 Buswell, G. T., 487, 497

 Cady, V. S., 544
 Caldecott, Randolph, 220
 Cameron, Hector Charles, 429
 Campbell, Doak S., 576
 Campbell, Elise Hatt, 274
 Campbell, N B., 566
 Canfield, Dorothy, 337
 Carmichael, A. Max, 376
 Carmichael, Leonard, quoted, 36, 37
 Carter, Harold D., 51
 Castle, W E., 25
 Caswell, Hollis L., 576
 Chaffey, Judith, 614, 650
 Chaney, L B., 42
 Chant, N., 55
 Chase, Lucille, 212
 Chave, Ernest J., 576
 Chazal, C. B., 359
 Child Development and Parent Education Bureau, 42
 Child Study Association, 42
 Clapp, Frank L., 497
 Clarke, Marjery, 221
 Clough, H D., 51
 Cobb, M V., 579
 Cockrell, D L., 200
 Coffey, H S., 175
 Coghill, G. E., 43
 Colby, Martha G., 178
 Cole, Luella, 497, 576, 650
 Coleman, Satis, 221
 Coleman, W. H., 459
 Collins, S. D., 156
 Comstock, Ada L., 634, quoted, 633
 Conard, Edith U., 343
 Conklin, Edmund S., 650
 Coyle, Grace Longwell, 651
 Cuff, Noel B., 455
 Cunningham, Bess V., 429
 Cunningham, Elizabeth M., 143
 Curry, 317
 Curti, M. W., 84, 429

 Dalglish, Alice, 221
 Davidson, M., 512
 Davis, Edith A., quoted, 309
 Davis, Frank C., 147
 Davis, Maxine, 651
 Davis, R., 539
 Deming, Jean, 12
 Dennett, Mary Ware, 518
 Dennis, Wayne, 147
 DePorte, J. V., 295
 Derryberry, Mayhew, 418
 Dewey, Evelyn, 43
 Dewey, John, quoted, 562
 Diehl, Harold S., 588
 Dimock, Hedley S., 587, 589
 Dolch, Edward W., 306, 455
 Doll, Edgar A., 549
 Donaldson, Lois, 221
 Dorsey, George A., 24
 Douglass, H R., 651
 Dunlap, Knight, 375, quoted, 30
 Dunn, Fannie Wyche, 316, 463

 Eisenberg, A. L., 576
 Eisgruber, Elsa, 220
 Eliot, Martha M., 120
 Estabrook, A H., 26
 Eurich, Alvin C., 599

 Fales, Evaline, 163
 Falls, Charles B., 221
 Featherstone, W B., 318
 Fellows, Vera, 125
 Fendrick, Paul, 313
 Fenton, Jessie Chase, 131
 Field, Ada M., 320
 Fillmore, Eva A., 81
 Finley, Charles W., quoted, 348
 Fischer, Eugen, 27
 Fisher, Dorothy Canfield, quoted, 563
 Fisher, Mary S., 163, 279
 Fitzgerald, J. A., 459
 Flack, Majore, 221
 Fleming, Cecile White, 653
 Fletcher, H Jalmer, 128
 Fletcher, Margaret, 282
 Flory, Charles D., 44, 439, 588
 Foster, Josephine Curtis, 80, 147, 177, 224, 429, quoted, 178
 France, Anatole, quoted, 12, 35, 118
 Frank, Lawrence K., 184, 623
 Freeman, Frank N., 29, 303, 474, 594
 Furfey, P. H., 82

- Galton, Francis, 25
 Gates, Arthur I., 211, 307, 314, 345, 350, 430, 459, 495
 Gesell, Arnold, 6, 60, 64, 67, 68, 80, 81, 94, 102, 147, 148, 283, 566, quoted, 28
 Giesecke, Minnie, 61
 Glueck, Eleanor, 622
 Goddard, H. H., 26
 Gooch, Wilbur I., 566
 Goodenough, Florence L., 43, 73, 76, 80, 250, 271, 547, quoted, 144
 Goodman, Mary, 279
 Grandprey, Medora B., 154
 Gray, Howard A., 595
 Greene, H. A., 430, 576
 Griffen, J. D. M., 235
 Griffith, J. P. C., 12
 Griffiths, Ruth, 175, 323, 430
 Groves, Ernest R., 430
 Groves, G. H., 43
 Gruenberg, Sidonie, 148
 Grulee, C. G., 148
 Gudakunst, D. W., 563
 Guilford, H. M., 125
 Guthrie, D., 578
 Gutteridge, M. V., 172
 Haggerty, M. E., intelligence examination, 546
 Hall, Stanley, 584
 Halverson, H. M., 59, 102
 Hanna, P. R., 614
 Hanner, James P., 12
 Hardy, Martha C., 558
 Harris, Albert J., 547
 Harrison, June, 601
 Hart, Joseph K., 576
 Harter, Richard S., 496
 Hartshorne, Hugh, quoted, 526
 Harwell, Emma J., 652
 Hattwick, Berta Weiss, 236, 275, 559
 Hawtreys, F., 283
 Headley, Neith E., 429
 Healy, William, 523, 554, 621
 Heath, Esther, 430
 Heering, Gertrude A., 133
 Helseth, Inga O., 502
 Henmon-Nelson Test of Mental Ability, 546
 Henry, Thomas R., 199
 Herbart, Johann F., quoted, 143
 Hertz, Marguerite R., 272
 Hertzman, J., 367
 Hetzer, Hildegard, 81
 Hierholzer, H. M., 81
 Hildreth, Gertrude, 160, 318, 338, 360, 430, 463, 469, 491, 495, 496, 497, 549
 Hilgard, J. R., 205
 Hill, Adeline B., 266
 Hill, H. S., 309
 Hill, Marjorie, 430
 Hoefer, Carolyn, 558
 Hohman, Leslie B., 367
 Hollingworth, H. L., 211, 431
 Hollingworth, Leta S., 431, 535, 538, 548, 593, 595, 629, 651, quoted, 373, 476
 Holmes, Frances B., 188, 189, 228, quoted, 226
 Hoppock, Robert, 651
 Horn, Ernest, 307, 459
 Horn, Madeline, D., 307
 Hubbard, Ruth M., 82
 Huber, 317
 Hunt, Caroline L., 386
 Hurlock, Elizabeth B., 61, 504
 Hutchins, Clifton, 626
 Ide, Gladys G., 431
 Ilg, Frances L., 148
 Ingram, C. P., 576
 Innskeep, Dolman Annie, 510
 Irwin, Orvis C., 43
 Isaacs, Susan, 283
 Jack, Lois M., 229
 Jacque, Helen, quoted, 600
 Janet, Pierre, 148, quoted, 643
 Jastak, J., 407
 Jeans, P. C., 52, 294
 Jenkins, A. M., 473
 Jennings, H. S., 43
 Jensen, D. W., 535
 Jensen, Kai, 44
 Jersild, Arthur T., 159, 181, 188, 189, 205, 228, 283, 474; quoted, 226
 Jessen, Carl A., 626

- Johnson, B , 544
 Johnson, B L , 463
 Johnson, Buford, 190
 Johnson, Harriet M., 148, 205, 283,
 quoted, 104
 Johnson, Marguerite W , 205
 Jones, Harold E , 140, 249, quoted,
 72
 Jones, Mary Cover, 81, 109, 110, 478,
 quoted, 194, 326
 Jones, Vernon, 577
 Jordan, Arthur M , 463
 Jorgensen, A. N , 430, 576
 Journal of Home Economics, The,
 quoted, 123
 Judd, Charles H , 497, 651
 Justin, Florence, 185

 Kanner, Leo, 366, 431, 559, quoted,
 517
 Kaumitz, Ruth M , 593
 Kawakami, Ruti, 291, 438
 Kawin, Ethel, 577
 Keller, Franklin J , 566
 Kellogg, M , 498
 Kenyon, Josephine H., 44
 Kereszturi, Camille, 442
 Key, C. B , 104, 205, 283
 Kilpatrick, W H., 505
 Kirby, Thomas S , 505
 Kirk, John G , 450
 Kitson, Harry D , 651
 Kluver, Heinrich, 177
 Knight, F. B , quoted, 545
 Knoebber, Sister Mary M , 651
 Knott, Virginia B , 155
 Knox, Rose B., 336
 Koch, Helen Lois, 229
 Koffka, Kurt, 148, 208, 211
 Krause, Ruth H , 51
 Kraushaar, Amalie, 44
 Kuhlmann, F , 80
 Kunkel, Fritz, 652

 Lacey, Joy M 324
 Lancaster, Thomas J., 463
 Langdon, Grace, 283
 Laton, Anita D , 575, 652
 Lawrence, I , 468
 Lazar, May, 463

 Leahy, Alice M , 44, 250, 276
 Leeper, Mary E , 283
 Lehman, Harvey C , 299, 446,
 577
 Lehman, Hilda, 491
 Lenz, Fritz, 27
 Levy, David M , 133
 Lewis, M. M., 148
 Lewis, Samuel J , 133
 Lichtenberger, A , quoted, 191
 Lichtenstein, Arthur, 477
 Lietz, E. B , 367
 Lima, Margaret, 347
 Lincoln, E. A , 547
 Linfert, H E , 81
 Locke, John, quoted, 111
 Louttit, C M , 577
 Lurie, L A , 367

 MacBride, E W., 27
 Macfarlane, Jean W , 283
 Mackintosh, Helen K , 463
 Maier, Norman F , 223
 Mallay, Helena, 173, 179, 225
 de la Mare, Walter, 1, 139, 312;
 quoted, 167, 445, 449
 Markey, Frances V , 175, 181
 Marquis, Dorothy P , 55
 Marston, Leslie R , 186, 284, 370
 Martin, Vibella, 650
 Mason, Bernard S , 299, 577
 Mathews, E , 544
 Mattson, Marion, 205
 Maxim, Hiram Percy, quoted, 361
 May, Mark A , 526
 McCallister, James M , 652
 McCarthy, Dorothea, 148, 245
 McClure, Sue Cook, 231
 McCollum, E V , quoted, 124
 McFarland, Margaret B , 180
 McGranahan, D V , 308
 McGraw, Myrtle B , 42, 64, 149
 McHugh, G , 61
 McKee, Paul, 577
 McLeod, Beatrice, 431
 McMillan, Margaret, quoted, 136
 McNemar, Quinn 630
 Mead, Cyrus D., 67, 431
 Mead, Margaret, 83, 169
 Mearns, Hughes, 310, 431

- Meek, Lois H., 211, 213, 474
Melcher, Ruth T., 62
Meltzer, H., 530
Meredith, Howard V., 140, 155
Merrill, Maude A., 69, 81, 165, 270, 473
Merry, Ralph Vickers, 431
Miles, C. C., 652
Miles, Katherine, 172
Millay, Edna St. Vincent, quoted, 1
Millichamp, D. A., 73, 185, 282
Milligan, Nancy Gertrude, 483
Mirenva, A. N., 207
Mitchell, A. G., 12
Mitchell, Elmer D., 299, 577
Mitchell, Lucy Sprague, 107
Monroe, Walter S., 432
Moore, Annie E., 432
Moore, E. S., 193
Moreno, J. L., 480, 636
Morgan, C. D., 549
Morgan, John J. B., 432, 578
Morse, Lucia Burton, quoted, 458
Mort, Paul R., 318, 413, 432, 565
Mott, Sina M., 451
Mowrer, Harriet, 607
Muehlenbein, Josephine, 82
Munkres, Alberta, 432
Murchison, Carl, 18, 28, 36, 44, 94, 177
Murlin, John R., 51
Murphy, Gardner, 331, 432
Murphy, Lois B., 181, 284, 331, 432
Murray, H. A., 549
National Congress of Parents and Teachers, 42
National Council of Parent Education, Inc., 42
National Society for the Prevention of Blindness, 13
National Society for the Study of Education, 350
Neary, L., 539
Nelson, A. K., 16, 44, 74
Nelson, Virginia L., 223
Newcomb, Theodore, 432
Newhall, Sidney M., 168
Northway, M. L., 473
Norton, John K., 446, 450, 453, 460, 470
Norton, Margaret Alltucker, 446, 450, 453, 460, 470
Office of Education, 42
Olson, Willard C., 143, 371
O'Neill, Eugene, 652
Orr, John Boyd, 83
Orth, Fred W., 431
Page, Mary Lou, 230
Palmer, Carroll E., 291, 295, 438, 558
Palmer, George T., 418
Park, Edwards A., 120
Park, W. H., 442
Payne, C. C., 294
Peabody, May E., 428
Pearson, Wilfred J., 149
Peterson, Frederick, quoted, 70
Peterson, Ruth C., 477
Piaget, Jean, 284, 325, 329
Pierce, Marion, 617
Pigors, Paul, 578
Plant, James, 52
Pratt, K. C., 16, 44, 74
Prescott, Daniel, 635
Pressey, Luella, C., 491
Pruette, Lorine, 149
Pyle, W. H., 360
Rainey, Homer P., 626
Rainey, L. H., quoted, 70
Rankin, A. L. K., 389
Rayner, R., 109
Reed, Lowell J., 291, 438
Reeder, Edwin H., 341, 470
Reynolds, Martha May, 149
Richards, Esther Loring, 432
Richardson, Frank Howard, 149, 246
Richmond, Winifred V., 578
Rickman, John, 149
Ridenour, Nina A., 389, 390
Rivlin, H. N., 433
Robb, Elda, 155, 262
Roberts, Lydia J., 433
Robinson, R., 612
Rogers, C. R., 544
Rogers, Frederick R., 443
Rogers, James E., 578

- Rose, Mary Swartz, 44, 261, 262, 284
Ross, Robert A., 43
Russell, David H., 459, 495, 578
- Saunders, A W., 493
Sayles, Mary B., 279, 433, 522, 544
Scammon, R E., 51
Scheidemann, Norma V., 578
Schilder, Paul, 366
Schwartz, J., 475
de Schweinitz, Karl, 518
Seashore, Carl E., 538
Sedgwick, Frank, 498
Seham, Grete, 374, 433
Seham, Max, 374, 433
Seth, G., 530, 578
Sewall, Mabel, 192
Shaffer, Lawrance F., 94
Shakespeare, J J., 487, 652
Shakow, David, 547
Shaw, Ruth F., 344
Sherborn, Florence Brown, 150
Sherman, Irene, 44
Sherman, Mandel, 44, 73, 199, 433
Shinn, Millicent W., 19, 74, 143
Shirley, Mary M., 17, 45, 78, 81;
 quoted, 57
Shock, N W., quoted, 140
Shuttleworth, F K., 29
Simpson, Margaret, 329
Sims, Verner M., 405
Slesinger, H. A., 156
Smith, Annie J., 320
Smith, J. M., 18
Smith, Madorah E., 164, 165
Smith, M C., 484
Sontag, L W., 36, 38
Staffelback, C H., 497
Stearns, Genevieve, 52
Steele, Arthur H., 128
Steffens, Lincoln, quoted, 276
Stephens, James, quoted, 112
Stephenson, Ruth, quoted, 624
Stern, William, 284
Stewart, Maude, quoted, 104
Stoddard, George D., 95, 150, 155,
 433, 484, 557, 578, 639, 640;
 quoted, 93, 558
Stolz, Herbert R., 614
Stowell, M., 559
- Strain, Frances B., 192, 433
Strang, Ruth, 555, 579, 645, 652
Stricker, E A., 649
Strickland, Ruth G., 500
Stuart, Harold C., 150, 295
Stubbs, Esther M., 43
Stutsman, Rachel, 81, 271
Sun, Kuo Hua, 16, 44, 74
Sunne, Dagny, 272
Suski, P. M., 557
Symonds, Percival M., 500
- Taba, Hilda, 611
Taft, Jessie, quoted, 566
Tarkington, Booth, 433
Terman, Lewis M., 69, 81, 165, 270,
 347, 473, 535, 536, 537, 630,
 652
Thom, Douglas A., 134, 434, 579
Thomas, Dorothy S., 554
Thomas, William I., 554
Thompson, Helen, 54, 60, 64, 67, 81,
 148
Thorn, Alice G., 221
Thorndike, Edward L., 211, 359, 370,
 381, 434, 474, 497, 498, 504, 579,
 quoted, 96
Thrasher, Frederic M., 478
Thurstone, L L., 477
Tiebout, C., 305
Tiedemann, Dietrich, 18
Tippett, James S., quoted, 348
Tisdall, Frederick K., 53
Towsley, Lena, 220
Traphagen, Virginia, 406
Travis, Lee E., 434
Tudor-Hart, B. E., 523
- Uhbrock, R. S., 166
United States Department of Labor,
 42, 45, 122, 123, 284
University of Iowa, 42, 194, 232
Updegraff, Ruth, 284, 314
- Van Alstyne, Dorothy, 172, 200, 266,
 268, 272, 434, 554, quoted, 166
Van Wagenen, M J., 80, 498
Van Waters, Miriam, 579
Vandecar, Vera, 52
Vernon, P. E., 408, 579, 597

- | | |
|---|---------------------------------------|
| Waggoner, Lovisa C , 104, 150, 160,
284, quoted, 105 | Wile, Ira S., 323, 539 |
| Wallace, R F , 36, 38 | Williams, Frankwood E , 653 |
| Wallin, John Edward Wallace, 434 | Wilson, Charles A , 285 |
| Waring, Ethel B , 213 | Witty, Paul A , 299, 577 |
| Washburn, Ruth W , 70, 265 | Woodring, Maxie N , 653 |
| Watson, Goodwin, 544 | Woodworth, Robert S , 211, 212
503 |
| Watson, John B , 109 | Woody, Clifford, 179, 579 |
| Weill, Blanche, 285 | Woodyard, Ella, 579 |
| Weiss, Lâ Berta A , 43 | Woolley, Helen T , 521 |
| Welch, Hazel, 561 | Wrenn, C Gilbert, 584 |
| Wellman, Beth L , 95, 150, 174, 175,
273, 484, 595, quoted, 93 | Wright, Harry B , 434 |
| Wescott, Grace, 602 | Wright, Minnie G , quoted, 159 |
| West, Robert, 375 | Wyllie, W. G , 149 |
| White, William A , quoted, 561 | Young, Pauline V., 653 |
| White House Conference on Child
Health and Protection, 285 | Zabriskie, Louise, 21, 45 |
| Wickes, Frances G., 276 | Zeutmire, Z , 294 |